10¢ A COPY

The OIL WEEKLY

Exclusively Devoted To The Production and Transportation of Oil and Gas

January 11, 1929 **Volume 52. No. 4**

proof of performance

HUGHES CONES

—is found in the using

Operators, Contractors, and Drillers throughout the Rotary fields of the World, who have used Hughes Rock Bits and Cones for nearly two decades, will testify to their dependability, speed, and economy of operation.

Sold by Supply Stores Everywhere

HUGHES TOOL COMPANY

Service Plants
Los Angeles, Calif.
Oklahoma City, Okla.

Main Office and Plant
HOUSTON, TEXAS

Export Office
Woolworth Bldg.,
New York City

I Wonder Why
I Hear About Harrisburg Couplings
Everywhere?

"Big pipe manufacturers standardize on Harrisburg Couplings.

"Progressive Producers throughout the oil fields insist on Harrisburg.

"Everywhere I go it's Harrisburg.

"Couplingsaspopularasthey are *must* be good."

HARRISBURG PIPE & PIPE BENDING CO.
Harrisburg, Pa.

Fully Equipped with Our Own Open Hearth Furnaces, Rolling Mills and Forge Shops

Distributors:
Harrisburg Pipe & Pipe Bending Co. of Texas, Inc., Houston, Texas
Harrisburg Supply Co., Tulsa, Okla.
George J. Hausen, Inc., San Francisco, Los Angeles and Taft, Calif.

HARRISBURG

Forged Seamless Steel Couplings

The OIL WEEKLY. Issued weekly by the Gulf Publishing Co., 3301 Buffalo Drive, Houston, Texas. Subscription price $1.00 per year; 10 cents per copy. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1897.

Easy Running!

TIMKEN Tapered Roller BEARINGS

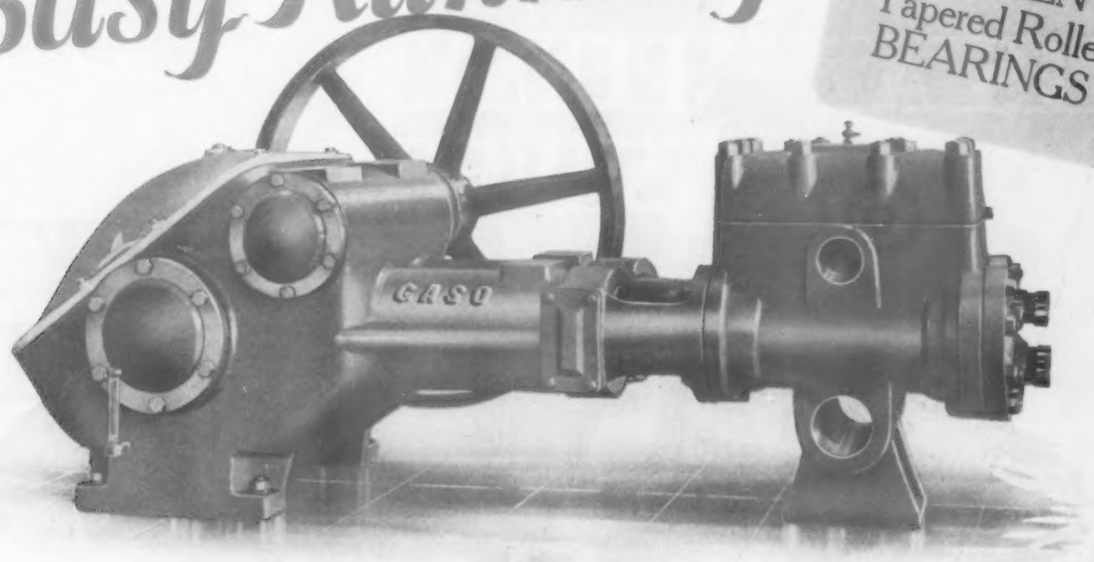

FIGURE 1508

SOLID HERRINGBONE GEAR

COMPLETELY ENCLOSED CRANKCASE

WORKING PARTS RUN IN AN OIL BATH

Absence of Friction Insures Long Life for this Gaso Pump

This Gaso Figure 1508 general service type pump is a machine of such fine design and manufacture that friction and wear have been eliminated to a truly remarkable degree. As a result, the maximum amount of power is turned into useful work, and maximum length of service is insured.

Enclosed crank case, with automatic lubrication—Timken Tapered Roller pinion and main bearings—gear of solid Herringbone construction, mounted in center on steel crank shaft—a double stuffing box arrangement between the power and fluid ends, which positively protect the oil reservoir from seeping water—are features of interest in the efficiency and durability of this pump.

Gaso Pump, Figure 1508, designed for pressures ranging from 250 to 800 pounds, is arranged for any type of drive—(1) pulley for belt drive, (2) direct connected to engine through flexible coupling, (3) motor, through silent chain or reduction gears, and (4) "V" rope drive. Investigate by letter, wire or phone.

GASO PUMP & BURNER MFG. CO.
TULSA, OKLAHOMA
Texas Office: 210 Petroleum Bldg., Fort Worth

GASO PUMPS
for every oil industry need

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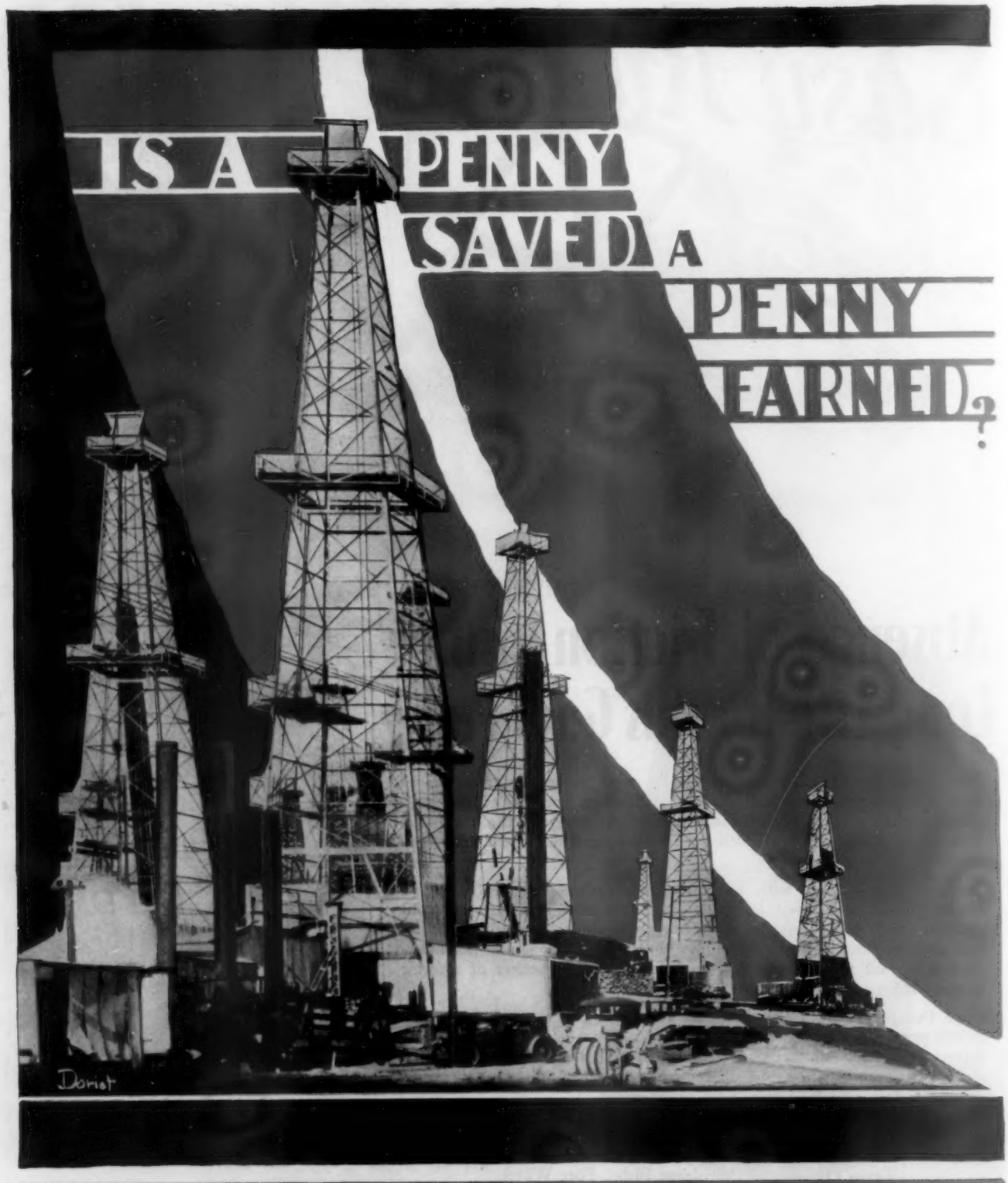


IDECO STRUCTURAL STEEL

The International Derrick & Equipment Company

Columbus, Ohio **Los Angeles, Cal.**

Say you saw it in The OIL WEEKLY

Is there such a thing as a bargain in oil field equipment? IDECO Structural Steel Derricks and the other galvanized rig equipment costs no more than you would expect to pay for a product you hope to render you years of uninterrupted service.

DERRICKS

Branches and Stocks—Detroit, Mich.; Dallas, Houston, Mexia, Wichita Falls, Odessa, Pyote, Borger, Corsicana, Pampa, Panhandle, Texas; Shreveport, Oil City, La.; Smackover, El Dorado, Ark.; Allen, Sasakwa, Tulsa, Tonkawa, Drumright, Okemah, Seminole, Okla.; Torrance, Los Angeles, Taft, Cal.
Export Representation: 74 Trinity Place, New York City; Columbus, Ohio; Houston, Texas; Los Angeles, Calif.

Say you saw it in The OIL WEEKLY

A ring of rubber saves $150,000!

Official of one of the largest Oil Companies *declares*

"On one lease where we have from 13 to 16 rigs drilling constantly and have for the past 8 years, our cost of operation has been cut down at a rate of from $150,000 to $200,000 per year by using Bettis Protectors and this does not take into consideration the loss of oil and wells that might have occurred due to collapsed casing had we not used Bettis Protectors."

Fully Patented

BETTIS PROTECTORS

"Best Bet Yet"

Ask for new Catalog

Patterson-Ballagh Corporation

Insurance Exchange Building, Los Angeles

Texas and Louisiana Distributors:

Bettis Sales Co., 617 Public National Bank Building, Houston

New York Office: 39 Cortlandt Street

Carried in stock at: Los Angeles, Santa Fe Springs, Ventura, Long Beach, Tulsa, Houston, New York City

Say you saw it in The OIL WEEKLY

A Letter from Harry G. Nye

Nye Drop Forged Pipe Cutter

No. 1-A ⅛ to 1¼" .....$2.75 net
No. 2-A ¼ to 2" 3.30net
No. 3-A 1 to 3" ..... 5.50 net

Nye Saunders Pipe Cutter

No. 1 ⅛ to 1" .....$2.00 net
No. 2 1 to 2" .....3.00 net
No. 3 2 to 3" ..... 7.33 net
No. 4 2½ to 4. ..... 12.00 net
No. 5 4 to 6" ..... 18.67 net

Nye thin blade cutter wheel, made to fit all standard makes of pipe cutters, and guaranteed against breakage in use. Made both in smooth and knurled edge.

NYE NO. 2
(Toledo Type)
Geared Threading Device Improved

Capacity 2½ in. to 4 in. inclusive. This tool has the same rugged construction as the No. 1 and No. 1A Nye Receding stocks. A ratchet handle and a spider hub threaded for 1-inch pipe is furnished as standard equipment.
Net price complete $50.00
West of Rocky Mountains .. 55.00

FREE TRIAL—ABSOLUTELY GUARANTEED

Nye Self-Locking Vise

No.	Pipe	Vise, Complete Net
00	⅛ to 2 "	$2.82
10	⅛ to 2½"	3.34
20	¼ to 3½"	5.00
30	½ to 4½"	7.33

To the Oil Men of the U. S. A.

Fellow Citizens:

Scientists are arguing as to what is the lowest form of animal life. Some say it is the jellyfish, some say it is the saxaphone player, but I want to plump all my votes for the fellow who borrows tools, or tries to. I don't mean the fellow-worker who knows tools, but the citizen who doesn't want a plumber to fix some little thing over at his house but just wants the plumber's wrench or whatever the plumber thinks he will most likely need, if the plumber will kindly tell him.

Now, I may have mentioned the tool-borrower before, but I know you won't mind it if I mention him again. And I know he won't mind it. He never does. Sometimes a plumber or a steam-fitter will let him take a wrench or a punch rather than make him mad, but our faces show as plain as pumpkins that we would like to give him a wrench in the neck or a punch in the jaw. But he doesn't seem to mind. You know some men are that way. And a few rhinoceroses.

But here's what makes me mad. A tool to me is as personal as a tooth-brush. I wouldn't want anybody to use that, and I don't want anybody else to monkey with my machinery. Maybe I am a nut on tools. I think most of us manufacturers and plumbers and steamfitters and electricians are. We think as much of a pet die-stock as a hunter does of a pet dog, or a fiddler of a fiddle. A man doesn't like to pass them around any more than he would his wife.

The Declaration of Independence spoke of "a decent respect for the opinions of mankind." I would like to make a few Fourth of July remarks about a decent respect for another man's tools. I have augers here that I raised from gimlets and tools that are worn so they just fit my hand, and hands worn so they fit the tools.

They are just right now; and I have made up my mind that if any tinkering householder comes in here and wants to lug some of them home, I am gonig to talk to him like I would like to talk to my wife sometimes. I am going to say to the borrowing barber, "All right, and you let me take your best clippers—I want to clip my dog. And your pet razor—I've got a corn."

As a matter of fact, I'll tell him, if he wants to borrow any pipe-cutting tools, to go buy 'em—and, of course, to buy Nye Tools, as they're the best.

Sympathetically yours,

HARRY G. NYE,

Otherwise Known As

THE NYE TOOL & MACHINE WORKS

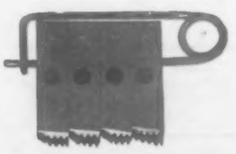
4120-30 Fullerton Avenue

Chicago, Ill.

(Copyright, 1928, by Harry G. Nye. All rights reserved)

The rugged construction and few working parts account for the simplicity and durability of these Nye Receding models. They do the work easily and efficiently.

No. 1 Nye Receding Pipe
Threader, complete ....$9.60 net
West of Rocky Mountains $10.80



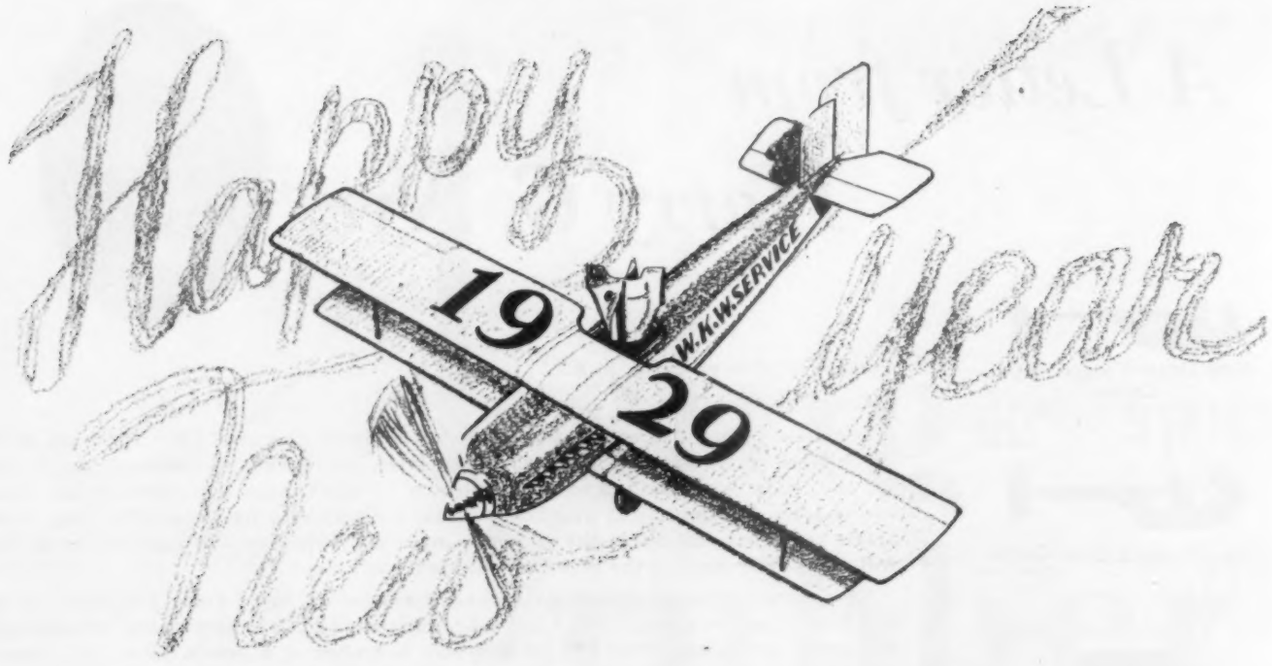
NYE (Toledo Type)
Chasers Fit Nos. 1, 1A and 2 NYE (Toledo Type) Stocks

Each set is guaranteed in every particular. Will cut much easier than other similar dies.

No. 1, 1" to 1½" ..$ .75 per-set net
No. 1, 2" .....$1.25 per set net
No. 2, 2½" to 4" ..$3.60 per set net

The No. 1A is the same as the No. 1, except that it is equipped with a ratchet for work where space is restricted.

No. 1A Nye Receding Pipe
Threader, complete ...$12.00 net
West of Rocky Mountains $13.50



Introducing

the *Pin Type* W-K-W BIT in the smaller diameters. . . . It's a hole-digging *Mate* to the famous *big hole* digger.

PIN TYPE
Patents Pending

PIN TYPE
Sizes 5⅝" to 10"

TYPE B 2
Sizes 10⅝" to 27"

"Those new W-K-W fobs sure doll up those overalls . . . *Ask for one.*

TYPE B2
Patents Pending

Wieman-Kammerer-Wright Co., Inc.

Hollydale (Los Angeles County) *California*

Mid-Continent Distributors:
Continental Supply Co.

Say you saw it in The OIL WEEKLY

BAASH-ROSS Tools *start* with the right Steel!

Forging and heat-treating of Baash-Ross tools are controlled by accurate recording pyrometers. Nothing left to guess or chance—dependable results from every heat!

BAASH-ROSS field shops are in the heart of active producing fields . . . Baash-Ross engineers and service men are observing performance, noting requirements and planning improvements in equipment *at the wells*, night and day, every day in the year. . . .

They know that *only* steels scientifically selected for the work required, forged directly from the billet, and heat-treated under complete control will stand up under the usage given these leaders among more than 200 Baash-Ross oil field tools:

Hosmer Blowout Preventers
Hi-Deck Crown Blocks
Tubing and Casing Heads
Kelly Bushings
Packing Overshots
Traveling Blocks
Drill Stems
H & W Rotary Slips

Hosmer Blowout Preventers must stand tremendous formation pressures—hold the weight of a string of drill pipe—be always ready for fast, rough action! The split, hinged packing assembly makes them quick and convenient—and simple design and forged steel parts make them safe!

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New York: 30 Church Street Houston: 1816 Nance Street
***Field Shops equipped for 24-hour mechanical service and supplies:* . . . Long Beach . . . Brea . . . Ventura . . . Taft**

J&L PIPE B-R

Immediate Delivery on J & L Seamless Steel Tubular Goods from Wilmington Yard

BAASH-ROSS TOOL COMPANY

General Offices and Plant — Los Angeles, California

Fill in and send to nearest office for complete information on Baash-Ross Tools

Name_____ Company_____

Address_____

OW—1-11-29

Every UNION WIRE LINE *is built for the job it has to do .....*

UNION Wire Lines are winning the highest praise for dependability and economy in cable tool drilling, rotary drilling, pumping, bailing and other oil field jobs. The unusual satisfactory performance of each of these lines is the natural result of their having been built especially for the particular job they have to do.

Our engineers are thoroughly familiar with the conditions under which wire lines are used in the oil industry, and have developed and perfected UNION Wire Lines to meet the exacting requirements of the various oil field jobs. From drawing and tempering the wire to fabricating the finished rope, these lines are manufactured completely in our own plant, which is equipped with every modern facility for imparting the highest quality and uniformity.

For a demonstration of exceptional service, give a trial to the oil industry wire lines produced by practical oil men.

UNION WIRE ROPE CORPORATION
3 North Madison Ave., Tulsa, Okla.

JARECKI MFG. COMPANY
Oil Country Distributors—Stocks at all stores.
Oil Country Sales Office: 820 Kennedy Bldg., Tulsa
Factory: 21st and Manchester, Kansas City
Branch Store and Warehouse: Portland, Oregon

Another crew pleased with UNION Wire Rope. Left to right, R. A. Miller, tool dresser; O. G. Smith, driller; M. A. Cunningham, tool pusher; Bill Cunningham, son of M. A. Cunningham; Jas A. Undercofler, Union Wire Rope Corp., and Dutch Brink, C. W. Griffith Drilling Co., Maud, Seminole District.

UNION WIRE LINES

Say you saw it in The OIL WEEKLY

because
it's a Wilson

Safety to life and limb is the first essential considered in the designing of Wilson Elevators. The links are of forged steel, processed by exclusive Wilson methods. They are curved at the bottom to fit close to the Elevator (a patented feature) and carry the heaviest loads without danger of fatiguing. All Wilson Elevators are designed to carry extremely heavy loads. They combine the maximum of strength, and are in perfect balance, with no part subjected to undue strain.

Two types—Center-Latch and Side-Door—for rotary, casing and tubing service. Descriptive literature upon request.

The safest elevator because it's a Wilson!

Succeeding WILSON & WILLARD MFG. CO.

WILSON OIL TOOLS CORP.
OIL TOOLS DIVISION
of
Byron Jackson Pump Co.
2501 E. Vernon Avenue, Los Angeles, California

Products—Elevators · Tongs · Undereamers · Circulating Heads · Rotary Drive Bushings · Pistons and Valves for Mush Pumps · Slotted Screen Pipe

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NEW YORK, N. Y.
1245 Graybar Bldg.

FIRST IN SAFETY ~ SPEED ~ STRENGTH ~ CONVENIENCE

Say you saw it in The OIL WEEKLY

CUTTING-OUT WELLS

ABERCROMBIE

REDBALL SERVICE

Twelve highly trained and skilled craftsmen, experienced in drilling and cutting practices, are ready to serve you on a moment's notice. Your phone call, wire or letter will bring one of these men, fully prepared with tools and equipment, to go to work. Call Abercrombie on your next cutting job.

The Abercrombie Inside Cutting Tool is constructed especially for this purpose. It is designed to do this particular job, quicker—more economically and better; —and the hundreds of jobs (both new and repeat) for the largest companies, are your assurance that it successfully accomplishes all these things.

The Abercrombie Inside Cutting Tool can prepare your well for deeper drilling by cutting out the pipe, liner and screen, leaving the hole clean and without damage to your casing or casing seat.

When you use Abercrombie Tools and service, you are not experimenting—you are employing a method that has been tested and proven over a period of . . . years of service. Our operators are practical drillers, skilled by years of experience in expertly "cutting out wells."

ABERCROMBIE CUTTING TOOLS

In the Following Sizes

3"—3½"—4"—4½"—5-3/16"—6"
—6⅝"—7"—8¼"—9"—10"

J.S. ABERCROMBIE Co.

616-18 West Bldg., Houston, Texas, U.S.A.

"CHAMPION"
A SUPER DERRICK

LEE C. MOORE & COMPANY, *Inc.*

PITTSBURGH · TULSA

Established 1907

New York Offices: Oilfield Equipment Co., 30 Church St., New York, N. Y.

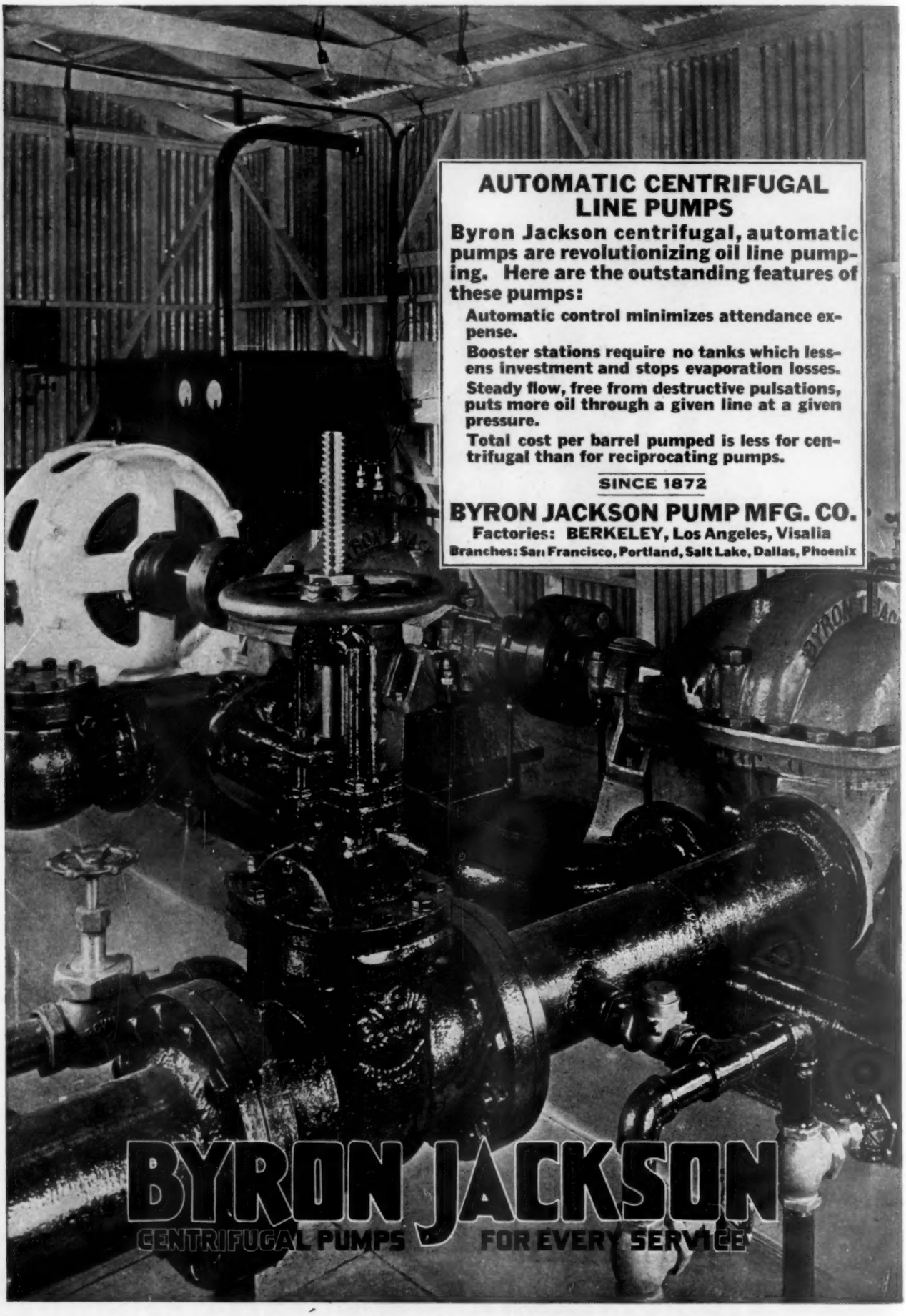
DALLAS, TEXAS HOUSTON, TEXAS WICHITA, KANSAS

CASPER, WYO. PARKERSBURG, W. VA.

SHREVEPORT, LA.

Stocks in all Principal Fields

Say you saw it in The OIL WEEKLY


AUTOMATIC CENTRIFUGAL LINE PUMPS
Byron Jackson centrifugal, automatic pumps are revolutionizing oil line pumping. Here are the outstanding features of these pumps:
Automatic control minimizes attendance expense.
Booster stations require no tanks which lessens investment and stops evaporation losses.
Steady flow, free from destructive pulsations, puts more oil through a given line at a given pressure.
Total cost per barrel pumped is less for centrifugal than for reciprocating pumps.
SINCE 1872
BYRON JACKSON PUMP MFG. CO.
Factories: BERKELEY, Los Angeles, Visalia
Branches: San Francisco, Portland, Salt Lake, Dallas, Phoenix
BYRON JACKSON
CENTRIFUGAL PUMPS FOR EVERY SERVICE

"Jim, we can't use this pipe... the threads are all shot!"

ISN'T it a goat-getter to find the threads of a length of new pipe full of dirt and badly damaged when you are ready to string it and need it most?

¶ Yet this is not at all surprising when you consider the hundreds of miles it has to be transported and the many times it must be handled and rehandled before being delivered to you.

¶ But today it isn't necessary to tolerate this common fault of unprotected pipe and couplings, thanks to the development of Colona Patented Thread Protectors which leading pipe manufacturers are rapidly adopting to preserve the original perfection of their pipe threads.

¶ If you are not getting this necessary protection on the pipe you are now using, write to the pipe manufacturer and specify that all your future orders be Colona-protected.

The Colona Protector is made of heavy steel capable of absorbing shocks and blows.

The coupling threads are fully protected by the heavy close fitting nipple.

Colona Manufacturing Company
PITTSBURGH, PENNA.

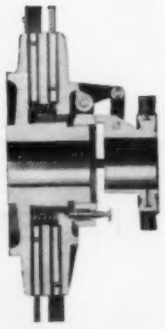
COLONA PATENTED PIPE THREAD PROTECTORS

When Work Must Be Done

THIS COMPANY makes a specialty of high duty clutches for use in the various forms of oil field production machinery. Sizes range from 5″ to 42″ diameters, in single and double plate types, giving any required capacity. Twin Disc clutches are standard equipment on many leading makes of modern production machinery because:

1. In all sizes and capacities, they invariably provide a high quality of smooth engagement under load, thus increasing the efficiency and lengthening the life of the whole machine.
2. They can be maintained constantly in correct adjustment with exceptional ease and no loss of time or output.
3. Built to the finest standards of mechanical precision and of the best materials for each part, they are both dependable and durable.

Every Twin Disc clutch installation is carefully engineered into place to assure satisfactory performance under all conditions. Send your clutch problems to our experienced engineers.



PARTS STATIONS

Boston (25), Mass.—Standard Auto Gear Co., 531 Columbia Road.
Buffalo, N. Y.—Edward W. Rode, 45 A. St.
Cleveland—Ohio Engine Parts and Service Co., 1053 E. 61st St.
Chicago—Motive Parts Co. of America, Inc., 2419 Indiana Ave.
Des Moines—Motive Parts Co. of America, Inc., 1204 W. Grand Ave.
Detroit—Whitney Brothers, 6464 Epworth Blvd.
Houston, Tex.—Portable Rig Company, Inc.
Los Angeles—Coast Machinery Corporation, 406 E. Third St.
New York City—John Reiner & Company, Inc., 309 Church St.
Philadelphia, Pa.—Maerky Machine Works, 240 Cherry St.
Pittsburgh, Pa.—Motive Parts Co. of Pa., 6314 Penn. Ave.
Raleigh N. C.—Motor & Equipment Co., 215 E. Davie St.
San Francisco—F. Somers Peterson Co., 57 California St.
Tampa, Fla.—Motive Parts Co. of Florida, Inc., 708 Twiggs St.
Tulsa, Okla.—Buda Engine Service Co. of Tulsa, Inc.

TWIN DISC CLUTCHES

TWIN DISC CLUTCH COMPANY

RACINE WISCONSIN

for Economy
for easier penetration and for faster drilling

A worthy companion to the H. C. Smith Type C core bit shown here.

Use the NEW Smith 4-Way drilling bits which are heavily set with a diamond substitute metal and hard faced.

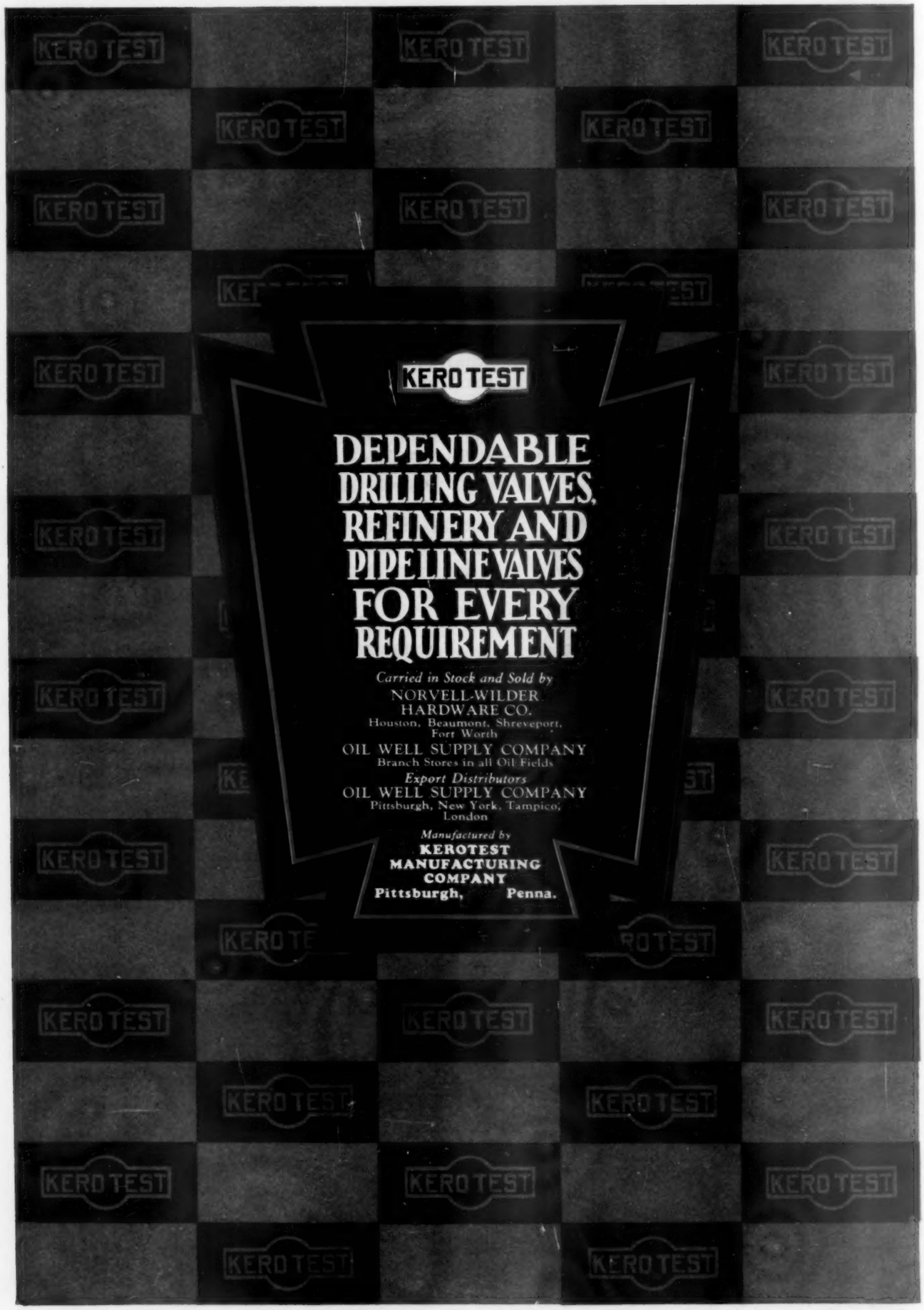
Built of highest grades of material and designs by our engineers to work equally efficiently either in hard or soft formations. The serrated construction of bit blades allows easy penetration of formation without use of excessive weight on drill pipe. All four blades cut to same gauge, insuring operator that hole is "out to gauge" at all times.

Speed with economy and reliability in operation are the built-in characteristics of California's newest drilling bit. Write for catalogue describing new Smith demountable drilling bit.

H. C. SMITH
MANUFACTURING COMPANY, INC.
Los Nietos, California

Branch Offices and Warehouses:
Bakersfield, Calif. Ventura, Calif.
Cable Address: "Smithco, Whittier."

The NEW FOUR-WAY DEMOUNTABLE DRILLING BIT


KERO TEST
DEPENDABLE DRILLING VALVES, REFINERY AND PIPE LINE VALVES FOR EVERY REQUIREMENT
Carried in Stock and Sold by
NORVELL-WILDER HARDWARE CO.
Houston, Beaumont, Shreveport, Fort Worth
OIL WELL SUPPLY COMPANY
Branch Stores in all Oil Fields
Export Distributors
OIL WELL SUPPLY COMPANY
Pittsburgh, New York, Tampico, London
Manufactured by
KEROTEST MANUFACTURING COMPANY
Pittsburgh, Penna.

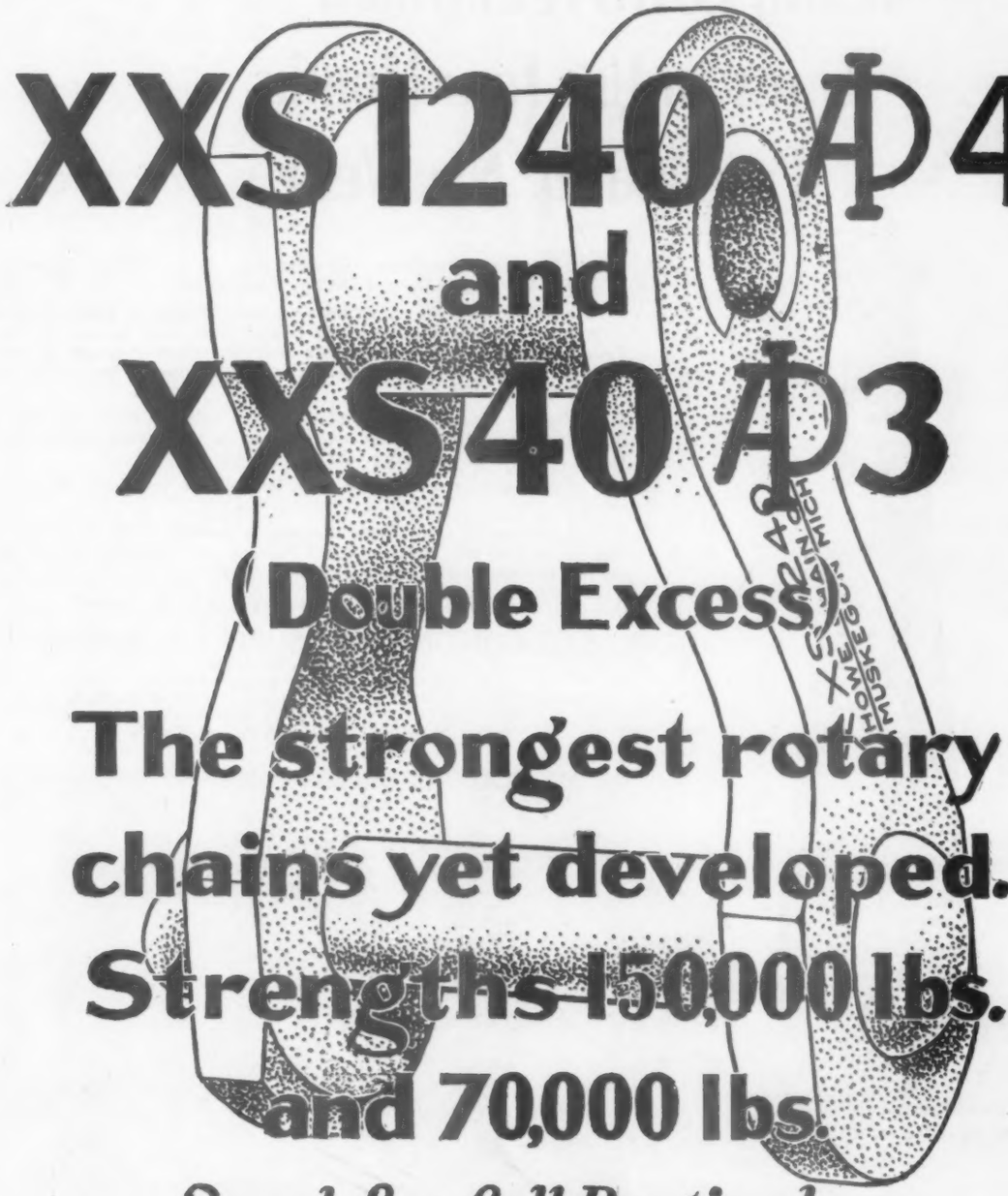
HOWE CHAIN

XXS1240 Φ4

and

XXS40 Φ3

(Double Excess)



The strongest rotary chains yet developed. Strengths 150,000 lbs. and 70,000 lbs.

Send for full Particulars

HOWE CHAIN COMPANY, MUSKEGON, MICHIGAN
CHAIN SPECIALISTS

Sold By

Republic Supply Company

GENERAL OFFICES, HOUSTON, TEXAS
OIL AND GAS WELL SUPPLIES

AMERICAN DRILLING LINES

"Nearly 7,000 Feet Down
Lines in Use Four Months
Practically No Wear"

Well No. 1, Section 15-12-3, near Oklahoma City, Okla.

Wirt Franklin Petroleum Corporation, in a letter ordering AMERICAN Sand Line and Drilling Line, wrote:

" . . . In ordering the above lines we were largely governed by the service we have had out of two similar lines now in use on the Cromwell-Franklin Oil Company's well immediately north of the State Capitol at Oklahoma City. The 5-3/16" casing was cemented in this well at 6698 feet."

"The hole is now at a depth of 6900 feet, and the lines have been in use for about four months, during most of which time it has been either a swabbing or fishing job."

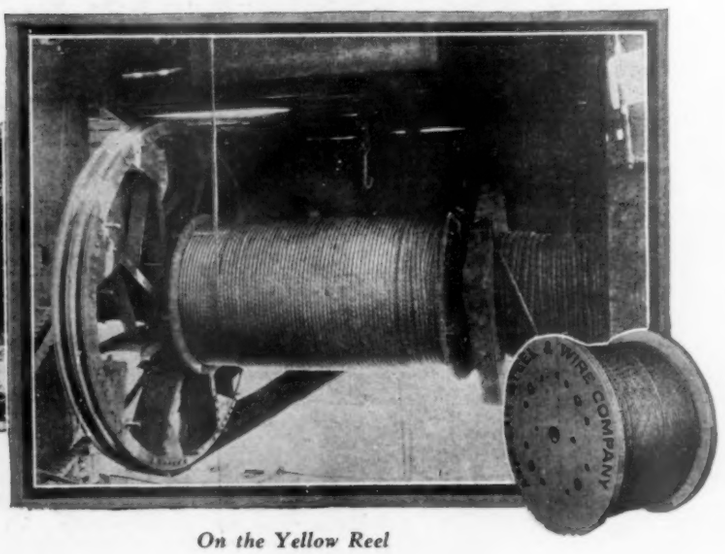
"In spite of the hard usage the lines have shown practically no wear at all."

Buy American Steel & Wire Company's AMERICAN Wire Lines and be sure of maximum service. There is an AMERICAN line of the right construction for every drilling purpose.

"If CONTINENTAL Sells It, There Is No Better"

THE CONTINENTAL SUPPLY COMPANY

General Offices: St. Louis
Export Office: 74 Trinity Court, New York
London Office: 316-317 Dashwood House, Old Broad St., E. C. 2
THE CONTINENTAL SUPPLY COMPANY, LTD.
411 Lancaster Bldg., Calgary, Alberta, Canada



On the Yellow Reel

This photograph was taken after 6920 feet—and no wear to the AMERICAN Drilling Lines.

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WORLD'S OLDEST AND LARGEST MANUFACTURERS OF OIL FIELD EQUIPMENT

Production Up Another 10,000 Barrels Daily

Texas, California and Wyoming boost output with large gains; Pennsylvania oil may become drug on market at present price

By H. J. STRUTH
Petroleum Economist

WHEN we consider the vast amount of new development work going on in most of the major fields, it is not at all surprising to learn of continual gains in daily average production. Last week, according to the American Petroleum Institute, the daily average production of crude showed another gain, this time amounting to 10,000 barrels a day. This brings the aggregate daily average output of the country up to 2,591,050 barrels, a new high record. An analysis of the detailed production figures for the past week shows that Texas gained more than 7000 barrels daily. With the exception of the Texas Gulf fields, all producing sections of that state registered gains in output. Winkler County, in the West Texas area, contributed the largest gain, which amounted to 5500 barrels daily. Oklahoma's output declined 3400 barrels, indicating that the sharp gain registered during the last week of 1928 was of no particular significance. In fact, it is believed by many that proration efforts will keep production down in the Seminole area sufficiently to offset any immediate gains in wildcat territory. However, the fact remains that a considerable amount of new work is going on in the Mission and Maud districts which is bound to result in a considerable gain in Oklahoma's output in the near future. Unless there are some sharp declines in the Seminole area, it is quite possible that Oklahoma will soon join the ranks of Texas and California and begin to show a series of marked gains in total output. The Rocky Mountain area also contributed a sharp gain in output last week, when the Salt Creek field, in Wyoming, registered a gain of 4400 barrels. California continues to pile up new high records each week. Last week there was a gain of 12,500 barrels at Santa Fe Springs. This was offset to some extent by declines aggregating 5800 barrels in the Long Beach, Huntington Beach and Ventura fields, resulting in a net gain for the state of 5700 barrels.

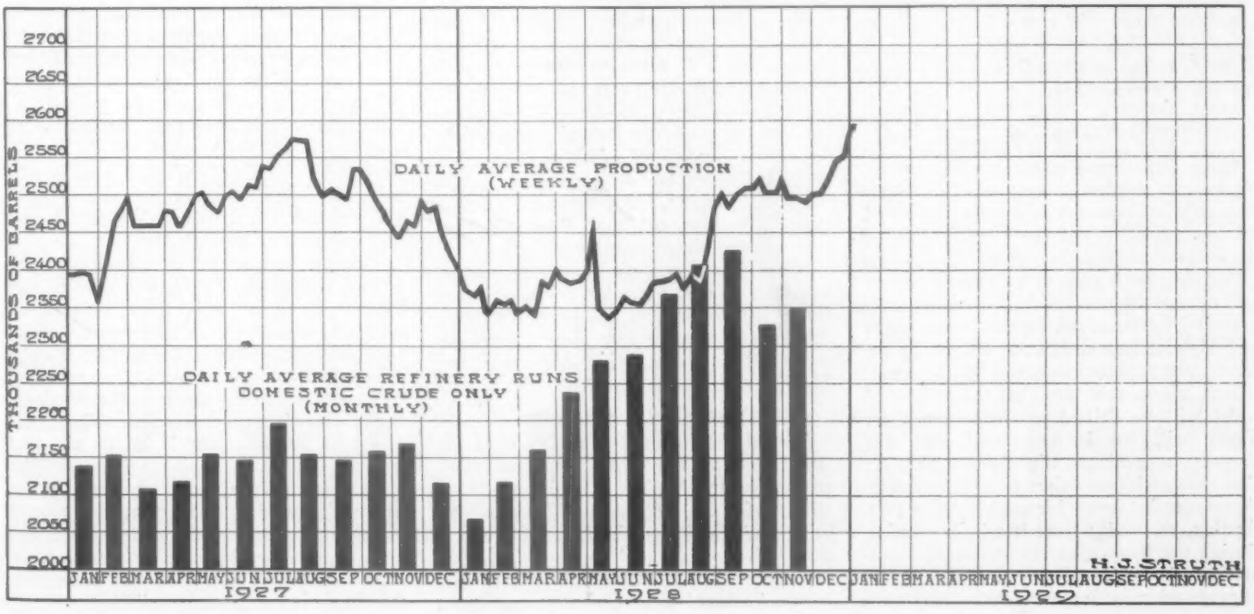
Chart Explained

Beginning with this issue, the accompanying chart of daily average crude production in the United States includes the daily average refinery runs of domestic crude. The bars represent the daily average for each month, and are obtained from the latest monthly report of the United States Bureau of Mines. This added information serves to give some idea of the demand for crude, in comparison with the daily output. It will be noted that there was a marked increase in demand for crude by the refineries during 1928, which is accounted for by the improved gasoline situation. Stocks of gasoline during the past year were unusually low, while the demand showed a considerable increase over 1927. This resulted in a material increase in the quantity of crude refined, as exemplified by the chart. As a matter of fact, however, the refineries have considerably increased the yield of gasoline from crude by cracking, which indicates a possibility of a relative decline in the demand for new crude supplies. If the refining industry gives serious attention to the economic aspect of increased cracking facilities, it is likely that there will be a decline in crude runs during the next few months.

Pennsylvania Increase

Another increase in the posted prices of Pennsylvania grade crudes, amounting to 25 cents per barrel, was announced by the Joseph Seep Agency on January 4. Following this, on January 7, the Humble Oil & Refining Company announced a reduction of 20 cents per barrel for Mirando, Texas, crude. While Pennsylvania oil is undoubtedly a premium oil, because of the high quality of lubricants it possesses, the successive increases posted for these grades are beginning to create an uncomfortable feeling among Eastern refiners who depend upon their crude supply from

DOMESTIC PRODUCTION AND REFINERY RUNS



DETAILS OF CRITICAL FIELDS

Pool	Wells Completed	Total Initial Production	Initial Per Well	Number Producing Wells	Daily Production Barrels	Daily Production Per Well	Rigs Up	Wells Drilling
WEST TEXAS—								
Hendrick	484	2,684,615	5,547	497	165,870	334*	6	55
Church & Fields	189	203,465	1,077	189	27,840	147	..	..
Gulf-McElroy .	68	55,740	820	68	13,085	192	..	3
Yates	285	1,836,700	6,445	284	73,060	257	3	13
Totals	1,026	4,780,520	4,659	1,038	279,855	270	9	71
TEXAS PANHANDLE—								
Hutchinson Co..	1,133	548,950	485	1,007	27,670	27	10	24
Gray County ..	307	127,065	414	297	21,965	74	9	47
Carson County	181	59,370	328	157	5,830	37	3	12
Wheeler County	44	14,645	333	35	805	23	7	14
Moore County .	7	4,040	577	5	2,340	468	2	8
Totals	1,672	754,070	451	1,501	58,610	39	31	105
OKLAHOMA—								
Seminole	1,621	2,113,832	1,304	1,316	277,950**	211	54	238
St. Louis	328	357,562	1,090	286	135,700	474	14	59

* Production partially pinched.
** Maud and Mission districts partially pinched.

these fields. In view of present unsatisfactory conditions throughout the petroleum industry of the United States, the continued mark-ups for Pennsylvania oil seem to be establishing a precedent. The last increase came as a distinct surprise, in view of the fact that the ratio of supply to demand in the Appalachian district fails to reveal any justification for another advance at this time. Since the refined oil market is sagging in practically every section of the country, it is believed that this latest advance in Eastern crude will result in some drastic moves on the part of the refiners in that area. Certainly, it will be impossible for a refinery to use Pennsylvania crude and expect to compete in the present market. There is too much competition in the marketing end of the business to expect the public to support any marked advance in the price of lubricants manufactured from Pennsylvania crude. Since that is the only solution for the refiner who uses those grades, at present prices, it is a foregone conclusion that there will either be an adjustment of values in Pennsylvania crude shortly, or this grade will become a drug on the present market.

Oklahoma

With flush areas causing a substantial increase in crude oil production of Oklahoma there is a very noticeable trend of oil operators toward the bearish side of the market outlook for 1929. The state's oil production is now up to 705,000 barrels and during the next 45 days is expected to exceed 750,000 barrels daily. The Mission and Maud areas, with some help from St. Louis, are expected to cause this increase.

Indications now are that a number of wells will be drilled at Oklahoma City. These will not be completed for six months or perhaps slightly longer. At that time, without other new discoveries, there may be room for some of the production, especially since it will be coming during the heavy gasoline consuming season of the year. However, this region is rated of great importance to the future market. The Allen field is another pool still looming on the horizon. Whether it will be developed at once is not yet determined, however, it is generally expected to be drilled before the summer.

Kansas is looking forward to a very material increase in production, the first one that the state has received in a long time. It appears to be a first class market factor. The Wichita district of Sedgwick County is the outstanding area there. It has seven producing wells with nearly 50 drilling and others being started. The seven wells are making close to 10,000 barrels daily.

Group 3 refined market continued to slump during the past week. The continued slump is due to natural effects of a low consumptive period and the high rate of manufacturing. This condition was aided somewhat during the past week by colder weather in its marketing district among the north and northwestern states, together with the inclement weather within the state itself.

U. S. Motor gasoline, 58-60, 437 end point, now has an averaging price of from 7½ to 8 cents per gallon, which compares with an average price of 8¼ cents a week ago. 60-62, 400 end point gasoline, is generally quoted from 8¼ to 8½ cents, and 64-66, 390 end point, is around 8¾ cents; with 64-66, 375 end point at 9 cents. By shopping around some buyers report that they can beat some of the above prices.

There is not enough buying in natural gasolines to post a market price, although plenty is available for purchase if wanted.

Kerosene remains very slow with 41-43, water white grade, being 5¼ cents and 42-44 at 6 cents.

West Texas Proration

Formal application was made during the past week by the Yates field proration committee to the Texas Railroad Commission for an increase of 27,500 barrels in allowable daily production. If granted, this will give the field an output of 100,000 barrels a day. A hearing will be held by the Railroad Commission at Austin on January 12. Winkler County operators were granted an increase of 25,000 barrels in allowable production on January 1, thereby restoring the previous allowance of 175,000 barrels daily. The lowering of gasoline prices in the North Texas refining district as a final effort to stimulate trading has had little influence upon domestic jobbers. Stocks are gaining at the plants and U. S. Motor gasoline is available in North Texas at prices ranging from 7⅛ to 7½ cents per gallon. The sharp cut in trading and lower prices on gasoline has lately placed some of the plants on a non-profit operating basis. Burning oils are not registering their usual seasonal advance in prices, while North Texas fuel oil is available in quantity at 50 to 55 cents a barrel.

With nothing definitely accomplished along the lines of conservation, California continues to show an increase in light oil production. The Committee of Fifteen, appointed some time ago to work out some feasible curtailment plan in the Santa Fe Springs field, has not yet succeeded in getting the necessary 80 per cent. of the operators to sign the agreement to use the surplus gas for re-pressuring the upper sands. The backbone of the plan called for an actual cut back of the wells, when production reaches a dangerous figure, but it seems that a stone wall has been struck in this respect. The committee, however, is making progress along the lines of re-pressuring, and some relief is expected from this method of attack. The governor has frowned upon the wastage of gas in the field, and any field, for that matter, and it looked for a time as if the operators were afraid of the consequences. With one big well after another flowing at capacity, certainly nothing of a physical nature has been applied to stop the flood. The moral support of a few cuts little ice in a situation of this kind. Only an energetic and concerted effort of all the operators will bring the situation in hand immediately.

The fact that production is expected to decline rapidly in the Santa Fe Springs field is looked upon as an excuse that the oil should be obtained quickly. There is a possibility that the decline will not be as rapid as expected, due to the fact that the Intermediate zone is a major factor in the deeper drilling. If the peak is as low as now predicted and the decline as rapid as anticipated, relief should be expected by April. If the reverse is the case, the crude market may be warped and twisted before the decline has wiped out the greater part of the gain.

The gasoline market is experiencing its annual sick spell. Just how long this unhealthy condition will exist is nothing more than a guess. There has not been an actual reduction in the service station prices, but cut rate stations are springing up like mushrooms, much to the displeasure of the larger companies. The usual talk of a gasoline war is in the air, and such a war is far from an impossibility. "Bootleggers" are retailing gasoline at prices far under the standard posted prices of the major companies. A slight loss of gallonage in some quarters is very irritating, to say the least, and a fight to the finish is not an impossibility.

West Texas Price Is Low—But It Is the Price

Completion of bargain price contracts sees all renewals at established schedule; acreage so held that limiting of output is certain to continue

By H. H. KING
Staff Representative

FORT WORTH, Texas.—The West Texas district, with two fields officially accredited with a combined estimated potential flow of 7,003,978 barrels daily from 752 wells, enters the new year with a firm crude price structure—thanks to the co-operation being given on proration enforcement—and offers less menace to the general crude market situation than certain major areas in Oklahoma and California. West Texas operators were officially vaccinated with proration enforcement last May, and this antidote for overproduction has since been successfully applied to the three flush areas in the district, with assurance of more general application as additional threatening areas put in their appearance.

Except for a few small short time contracts hanging fire in the Hendrick field, the last group of crude contracts involving less than the prevailing posted price were completed and terminated at the close of 1928. Renewal contracts now being solicited by refiners carry the recognized posted price of 65 cents per barrel at the well, plus a transportation and tank car loading charge in contrast to conditions existing in Winkler County one year ago when operators were welcoming market outlets at the current posted price, or below in some instances, for oil loaded aboard buyers' cars at the nearest racks in Ward County, a distance ranging from 15 to 20 miles from the field proper.

Excluding the Yates, Roberts-Settles and Winkler County areas, which are throttled by proration enforcement rules fixed by the Texas Railroad Commission, the West Texas district is without a single pool or field that can be put forth as having possibilities of reaching threatening proportions from a production standpoint within the next six months. Old fields such as Big Lake, World-Powell, Westbrook, Church & Fields, Gulf McElroy and McCamey are completely out of the picture. Two unknown quantities exist in Southeastern Ward and Northern Pecos Counties, where semi-shallow flowing wildcats were completed in November, but development is slow in getting under way around these two discoveries, which are holding to their initial flow of about 120 barrels daily each owing to the absence of a market outlet for the oil as produced. These two wildcat producers are the only flowing wells in West Texas that are not served direct by a trunk line outlet, or a line extending to the nearest railroad shipping point, and arrangements are now being made to provide an outlet in the near future, thus giving all of the widely scattered and remotely located producing areas in the district a market outlet.

Yates Proration Secure

Barring possibilities of the leading supporters of proration enforcement in West Texas breaking away, the Yates field is the most secure for the future on abiding by proration rules. The bulk of this major oil producing area is controlled by Mid-Kansas-Transcontinental Oil Company, The California Company, Gulf Production Company, Shell Petroleum Corporation, Simms Oil Company, McMan Oil & Gas Company, Marland Production Company and Humble Oil & Refining Company. The remainder of the producing leases, all of which are located on the northwest, west, south and southeast edges of the structure, are split up in small tracts among 12 independent companies and operators. This latter group could break away from proration, and still not disturb the field proper, as the loyal companies would be allowed to open up wells that might be affected by drainage from those not abiding by the proration rules.

Some dissension has come up in recent weeks among several of the smaller operators on the southwest side of the Yates field regarding their daily production allowance under proration rules, and production exceeded the allowable quota. This resulted in the Railroad Commission notifying the pipe line companies serving this and other West Texas fields where proration is in effect, that the carriers are liable to court action and heavy fines if more oil is run from any unit or lease than authorized under the proration rules. Carriers have been more watchful here of late in seeing that crude runs are not in excess of allowance. Small operators in the Yates field as well as in the Winkler County area have been given special allowances over and above what their properties are entitled to under the proration rules, but all such special dispensations are first approved by the commission.

Revised proration figures released on January 1 by Umpire Ray Richmond, credits the Yates field with having an estimated potential flow of 4,348,191 barrels daily from 284 producers located on 157.9 units of 100-acres each. However, some of the leases involving less than 100-acres are considered as whole units, thus reducing the producing acreage to a lower figure than indicated by the number of producing units. Only 37 of these wells are making more than two per cent. water, or cut oil. The maximum daily allowable production for this flush area is 72,500 barrels during the first half of January. This allowable daily production enables the Yates field operators to produce their wells at an average of 1.6 per cent. of the estimated daily potential production, while the daily average production per well will be restricted to 255 barrels during this 15 day period.

Yates Increase

A special meeting of the Yates field proration advisory committee was held in Fort Worth, January 3, with W. A. Moncrief, Fort Worth independent operator, presiding as chairman of the committee, to make formal application to the Railroad Commission to boost the allowable production of the Yates field to 100,000 barrels, or an increase of 27,500 barrels. The committee was unanimous in their vote for the increase, which has been requested to take place on or before January 16. A hearing will be held by the commission before granting the request. The Mid-Kansas Oil & Gas Company has requested that its pipe line subsidiary, the Illinois Pipe Line Company, be allowed to run for purchase the full amount of the production increase petitioned by the Yates field operators, thereby boosting runs of the Illinois Pipe Line Company to 49,500 barrels daily. Illinois Pipe Line Company has ample facilities to accomodate this volume of crude through its stub line, which consists of a looped eight-inch carrier from the field gathering station to Del Rio tank farm, and 10-inch line from the latter point to Lytle, located near San Antonio. All of the Yates crude purchased and produced by Mid-Kansas and transported by Illinois Pipe Line Company is turned over to the Humble Pipe Line Company at Lytle for pipe line delivery to Humble Oil & Refining

Company's refinery and export terminals at Ingleside.

Absence of a single dissenting vote among the major companies and independent producers in the Yates field against the proposal to increase the daily production allowance is indicative of the improved market situation experienced lately by West Texas low gravity crudes. The current market outlet for Yates field crude is divided as follows:

Humble Pipe Line Company	28,500
Illinois Pipe Line Company	22,000
Shell Pipe Line Company	14,500
Gulf Pipe Line Company	7,500
Total	72,500

In the event the output of the Yates field is allowed the increase, the Illinois Pipe Line Company will become the second largest pipe line transporter of West Texas crude until the Shell Pipe Line Company's new line is put in operation several months hence. Illinois Pipe Line Company has a gathering and transportation tariff of 20 cents per barrel on Yates crude movement to Del Rio, and a joint rate of 30 cents per barrel applies on crude moving from Del Rio to Lytle thence via Humble Pipe Line Company's line to Ingleside, making a total of 50 cents per barrel from the field to tidewater.

The marketing of Yates crude is confined to four major pipe line companies, with a new member in sight by late spring through completion of The Texas Pipe Line Company's 12-inch carrier, extending to tidewater. The Texas Pipe Line Company does not control a barrel of production in the Yates field, but has purposely routed its West Texas outlet to this area with expectations of obtaining a large portion of its crude requirements after properties of The Texas Company in Crane and Winkler Counties are dissipated. Some doubt exists as to whether The Texas Company is going to succeed in obtaining the volume of oil desired from the Yates field, with the bulk of the producing area controlled by companies that have trunk lines of their own to protect with a future crude supply.

The Winkler County area heretofore has been the "bargain counter" for refiners seeking crude supplies at comparatively cheap prices in the West Texas district, and due to long time contracts continues to be the only important source of supply remaining open for buyers in tank car lots. Offers of crude below the posted price, or at a sacrifice below average transportation and loading charges for tank car shipments, are no longer available in Winkler County, and a firm price structure exists as the time draws near for a number of Louisiana and Texas plants to renew crude contracts. More competition from major pipe line companies is to take place this month as result of the Atlantic Pipe Line Company starting initial operations on its 40,000 barrel capacity 10-inch trunk line from this area to export terminals at Atreco. This line does not make direct contact with any other West Texas field, and is almost entirely dependent upon Winkler County's fields to supply the tonnage. However, a small connection has been made in Coleman County, where high gravity oil is controlled by Atlantic Oil Producing Company.

Winkler Proration

Estimated potential production of Winkler County was placed at 2,655,787 barrels from 468 producers at the close of 1928 by Umpire Alsobrook, while the allowable daily production was increased on January 1, 25,000 barrels, making the new allowance 175,000 barrels daily, or about 6.6 per cent. of the potential. Under the new allowance, Winkler County operators are allowed to flow their wells at an average rate of 374 barrels daily. A very small percentage of the oil produced escapes treating expense, because of the wiedspread encroachment of water in the Hendrick and Llano-Daugherty fields, especially. The estimated potential production given Winkler County is a misnomer as far as indicating actual possible production, and has reached its peak in the Hendrick field, where drilling has dropped to 55 operations, of which 50 have reached the big lime horizon and are ready to complete. Southern Crude Oil Purchasing Company et al are credited with 32 of the above operations, or more than one-half of the total. This latter concern is shipping all of its production, except that going into storage, via tank cars to Middlewestern plants of Standard Oil Company of Indiana, or to tidewater.

The south end of the Hendrick field is still open for further important extensions, but in a narrower path than the average for the field, but otherwise its future carries little threat as a disturbing influence in crude market circles. The majority of the operators are in favor of continued restrictions on production in order to retain a back pressure on the structure and retard the advance of sulphur water into the porous lime, and in all liklihood flowing production will be available in this particular field for the greater part of 1929. Two groups of operators developing small tracts in partnership broke ranks from proration December 19 through a temporary court injunction, but otherwise proration has been carried out successfully in Winkler County. A court hearing is to be held shortly to determine if the above injunction should be made permanent, or dissolved. The injunction allowed the flowing of eight wells at rate of 4000 barrels daily, and one well on a 20-acre tract, which also has one dead producer, at maximum rate of 1400 barrels daily. The bulk of this oil is being sold on contract at 40 cents per barrel at the well, as part of a deal that involved the advancement of funds to drill the wells, and at the present rate of production the contract will be completed within 30 days. This particular contract involves the lowest price paid for any appreciable amount of West Texas crude.

The close relationship of the water level with the oil and gas lime pay in the Llano-Daugherty pool, North Winkler County, has reduced the early estimates on potential production to be expected from this area, while the O'Brien pool, located south of the Hendrick field, is also making a disappointing showing. Acreage in the latter area is in mostly large tracts, and close spacing of wells is not anticipated.

The new year terminated the crude contract held by Magnolia Petroleum Company for a maximum of 7500 barrels daily from the Landreth Production Corporation's strip lease in the Church & Fields area, Crane County, at 50 cents per barrel at the well. This property was acquired by The Texas Company, June 20, 1928, along with other West Texas properties for $6,500,000, but the contract with Magnolia Petroleum Company remained in effect over the balance of the year. The strip lease is holding at 6900 barrels daily from 16 wells, and as result of the termination of the contract, The Texas Company has arranged for Magnolia Pipe Line Company to common carrier the oil to the Gulf Coast until The Texas Pipe Line Company's trunk line is completed.

While the West Texas district has gained distinction in having the lowest priced refinable oil in recent years, it also has an unusually attractive contract for the producers and royalty owner, as the Big Lake Oil Company and Texon Oil & Land Company, owners of the Big Lake field, which is averaging 18,100 barrels daily, are receiving the average Mid-Continent gravity scale price for like gravity crude on contract for the life of the property. The Reagan County Purchasing Company, which is controlled by Marland Oil Company, made this contract in November, 1924, and Humble Oil & Refining Company later contracted to fulfill same until April 1, 1940.

Tulsa. — The International Petroleum Exposition and Congress for the year 1929 will be held from October 5 to 12, inclusive. This was announced by a committee composed of Alf G. Heggem, chairman; A. W. Leonard, R. A. Griffith and J. Burr Gibbons.

This date will not conflict with other conventions and the like of the oil industry and is announced early so as to give exhibitors and those expecting to attend sufficient time to make their plans. No reservations for space will be made until some important decisions can be made by several committees now being appointed.

Special emphasis will be placed on foreign attendance, foreign programs and exhibits for 1929.

Tulsa.—Superior Oil Corporation has succeeded in drilling by the lost joints of casing in its important wildcat in SWc NW NE Section 24-8-2, Western Pottawatomie County, Oklahoma. The five-inch casing has been cemented on top of the Hunton lime where it is showing oil through rotary mud.

Sedgwick County Drilling Campaign Increasing Rapidly

By WARREN BAKER
Staff Representative

FIVE months ago Sedgwick County, Kansas, had one drilling oil test and not a barrel of crude oil production. This was after 13 years of slow and disappointing exploration by the bit, during which time 21 wildcat tests were completed without success. Today the county has six producing oil wells with a daily combined average production of 7000 barrels, and a rapidly increasing drilling campaign which has already reached more than 40 operations.

Early last August the first real oil producer to be completed in Sedgwick County was drilled in. It was the Marland-Gypsy-Buvibar Companies' Wright 1, Section 12-26-1w, a short distance north of Wichita. The well flowed 1750 barrels natural from the Wilcox sand at 3366-68 feet.

A month ago came the strike that placed Sedgwick County among the most promising areas of the Mid-Continent region. The important completion was Marland Production Company's Goodrich 1, Section 16-25-1e, which made 2125 barrels in 12 hours from 3010-20 feet. About the same time Marland-Gypsy-Buvibar were drilling in the offsets to their Wright 1. The three offsets came in for producers. Both areas were controlled, since the producers were located on large blocks of acreage, but several wildcat tests were started in the vicinity by other lease holders.

In the meantime a few tests that had commenced drilling with the completion of the Marland-Gypsy-Buvibar Companies' Wright 1, were nearing the pay horizon. Several of them found important showings in upper formations which aided in boosting interest in the county. Upper formations have been found high in others and they are expected to be producers when completed.

Then came another important completion. LaRobb Oil Company, (Aladdin), T. B. Slick and Lockhart & Pryor's Dr. Smyser 1, Section 36-25-1w, two miles north of the Wright field, found the pay horizon good for 1000 barrels daily.

A score of locations were made within 48 hours. Trucks and teamsters commenced moving the materials for rigs to the locations. Many locations were made on tracts ranging from two to 10 acres. Some of these were on the Valley Center townsite, just north of the Smyser producer, with others in suburban additions of Wichita. This was the beginning of a competitive drilling campaign in one of the largest active wildcat plays in the Mid-Continent at this time, and the largest drilling race in Kansas since the Old El Dorado days back in 1915-17, when that

(Continued on next page)

Sedgwick County, Kansas, Completions

Company, Farm and Location	Date Completed	Remarks
Citizens Oil & Gas Co., Drollenger 1, sec ne nw 31-27-2e	1915	Sand 2937-73 ft, show oil and gas; abandoned 3060 ft.
Wichita Oil & Gas Co., No. 1, csl nw 17-23-1w	8/15/18	Abandoned 1400 ft.
Empire Gas & Fuel Co., No. 1, nec sw 33-26-2e	6/15/21	Show gas 385 ft, top Mississippi lime 2960 ft, found water; total depth 3005 ft.
Stanley Kimmell, No. 1, swc 14-27-2e	8/ 3/21	Abandoned 2950 ft, water.
United Petroleum Syndicate, No. 1, c nw ne 19-26-2e	8/29/21	Show gas 860-70 ft, dry sand 2270-80 ft, show oil sand 2634-42 ft; water in sand 2670-2700 ft, abandoned 3060 ft.
Wichita Oil & Gas Co., No. 1, nec sw 17-28-1w	6/15/21	Abandoned 3395 ft.
L. E. Craig, Crawford 1, nwc ne nw 26-28-1e	7/ 6/25	Wilcox sand 3501-20 ft, water; Siliceous lime 3520-3802 ft, water.
Liggett, Freek 1, nec nw 11-26-1e	8/ 6/25	Show gas in shale 818-23 ft, show oil 2520-25 ft, show oil and gas in lime 2620-25 ft, show oil and gas at 3020 ft. Total depth 3185 ft.
Jasper & Besckska, No. 1, c sw 26-28-1w	6/27/25	Top Silicious lime 3950 ft, with water; abandoned.
Chastain & Chastain, No. 1, nwc se 7-27-1e	1/12/26	Sand 2307-15 ft carrying water; show oil and gas in lime and shale at 2625-30 ft; water and some gas in sand 3145-3390 ft; top Mississippi lime 3390 ft; sand 3618-50 ft, show oil, total depth 4118 ft, abn.
Smith & Kellar, No. 1, nwc sw 9-25-2e	5/26/26	Abandoned 900 ft.
Wichita Oil & Gas Co., Tjaden 1, nwc sw 34-26-1e	8/17/26	Abandoned 250 ft.
Boyle-Tack, Metcalf 1, nec sw ne 6-25-1e	6/ 4/27	Dry and abandoned 3875 ft.
Big Chief Oil Co., Fulton 1, swc ne 1-26-1e	7/25/27	Dry and abandoned 3200 ft.
T. C. Johnson, No. 1, nec nw se 7-26-2e	2/16/27	Show oil 2990-3125 ft, dry and abandoned 3185 ft.
Noble & Long, McGrew 1, nwc se 25-25-2e	7/25/27	Dry and abandoned 2600 ft.
Marland Production Co., Schmidt 1, nwc sw sw 5-28-1w	8/30/27	Show oil 3362-3577 ft, show oil and water in sandy lime 3677-3744 ft, abandoned 3910 ft.
Robbins Oil & Gas Co., Robbins 1, sec ne ne 20-28-1e	1/29/28	Show oil in sand 25-16-2605 ft, dry 3105 ft.
Union Oil Co., Bank 1, nec nw 8-28-2e	6/18/28	Dry 3165 ft, water.
Marland-Gypsy-Buvibar Co., Wright 1, sec ne se 12-26-1w	8/ 8/28	Top Kansas City lime 2550 ft, show oil 2550-80 ft, water 2580-2660 ft, show oil in chat 3025-40 ft, Wilcox sand 3366-68 ft, initial production, 1750 bbls.
Seltzer Springs Oil & Gas Co., No. 1, nec nw 25-27-2e	10/26/28	Dry 3014 ft.
Merriman, Landon 1, sec 14-28-2e	.....	Lime 2650-60 ft, show oil and gas; Wilcox sand 3288-3303 ft, dry 3531 ft.
Marland-Gypsy-Buvibar Co., Lyons 1, swc nw sw 7-26-1e	11/26/28	Wilcox sand 3352-59 ft, 1694 bbls. first 24 hours.
Marland-Gypsy-Buvibar Lyons 2, nwc sw sw 7-26-1e	11/30/28	Wilcox sand 3353-57 ft, initial production 950 bbls.
Marland Production Co., Goodrich 1, c sw 16-25-1e	12/15/28	Gas 1145-50 ft, water 1160-65 ft, Wilcox sand 3010-20 ft, flowed 2125 bbls., in 12 hours.
Marland-Gypsy-Buvibar Co., Lance 1, nec se se 12-26-1w	12/ 9/28	Wilcox sand 3362-67 ft, 823 bbls.
LaRobb, T. B. Slick et al, Smyser 1, ne sw se 36-25-1w	12/29/28	Pay 3436-39 ft, 510 bbls. in 19 hours.

area was the "Seminole" of the oil industry.

Leasing

Six months previous to the oil strike several oil companies commenced to study Western Kansas with core drills and magnetometers, following several important showings in the extreme western part of the state. The findings of these machines resulted in considerable leasing, which increased rapidly as other companies entered the play. The tremendous size developed by this play is shown by the fact that at one time there were 26 core drill machines, 35 magnetometers, and three torsion balance machines working in various parts of the region.

Sedgwick County was not overlooked in the play, although during the early part it was not a favored spot. Several blocks were assembled at this time. Following completion of the Wright producing well the county became the center of leasing activity. Blocks were assembled wherever they could be and other areas checkerboarded, particularly in the northeast part of the county.

With completion of other producing wells, prices soon reached $50 and $75 per acre in their vicinity. In one case recently it is reported that a price of $400 per acre was paid for a 160-acre tract near Valley Center, in the heart of the present play.

The present play parallels the old Augusta-El Dorado and Florence-Peabody-Elbing trend of the old days. It is thought probable that several fields will be found along this trend. With the completion of the Marland Production Company-Goodrich well and the LaRobb et al test, this belief seems to be partly carried out. More than 100 blocks of various sizes have been taken along this trend, extending into Harvey, McPherson, Marion and Saline Counties, lying north of Sedgwick.

Early History

The first test of the county was the Citizens Oil & Gas Company's Drollenger 1, SEc NE NW, Section 31-27-2e, which was drilled in 1915. This test had a showing of oil and gas in a sand found at 2937-73 feet. Several years passed before other tests were drilled.

The first test to reach the Wilcox sand was the L. E. Craig Crawford 1, in NWc NE NW, Section 26-28-1e. This well found the Wilcox sand at 3501-20 feet with water. It was deepened to 3802 feet, penetrating the Siliceous lime, which also carried water.

The deepest test ever drilled in the county, and a very interesting one, is Chastain & Chastain No. 1, NWc SE, Section 7-27-1e, on the northwest corner of the Wichita townsite. This test was finished early in 1926. Several showings of oil and gas were encountered, but none were commercial. The well reached 4118 feet before being abandoned.

SEDGWICK COUNTY DRILLING REPORT

Lario & Blair, Tjaden 1, c ne se 22-29-2w, drilling 1350 ft.

McCulloch-Lewis et al, John 1, c ne sw ne 24-29-1e, drilling 1715 ft.

Tatlock et al, Goeldman 1, nw ne 6-29-2e, shut down 2210 ft.

Maglason, Buckles 1, nw se 3-28-1w, shut-down 250 ft.

Miller & Wentz, Shaeffer 1, nwc ne 9-27-2w, rig.

Barnsdall Corp., Faber 1, sw nw 6-27-1w, total depth 3010 ft, ur 8-inch.

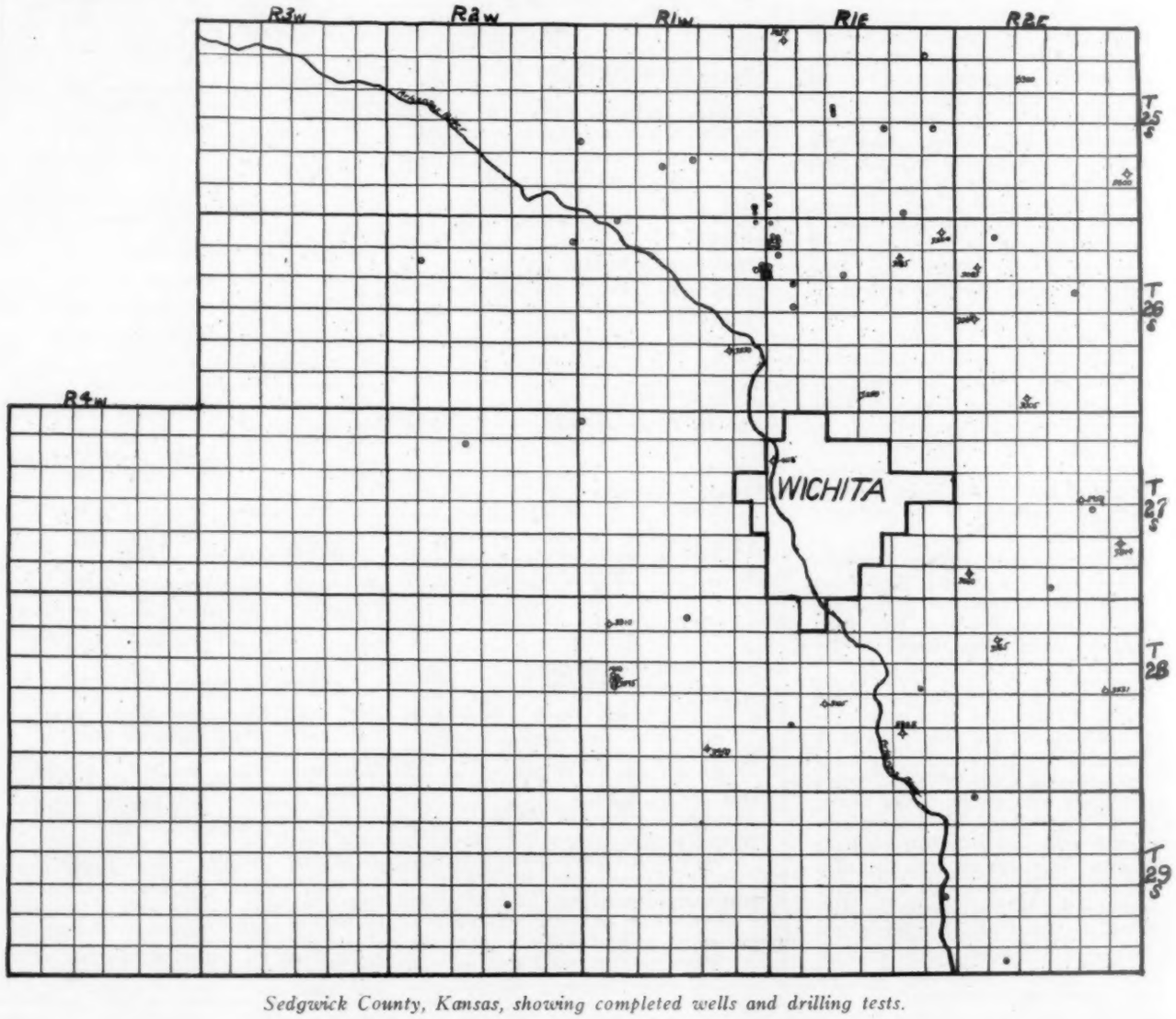
Lewis et al's Taylor 1, nw ne 23-27-2e, shut-down 800 ft.

Barnsdall Corp.'s Means 1, nw sw 34-27-2e, total depth 2117 ft, ur 10-inch.

BuviBar Petroleum Co.'s Steel 1, sec 1-26-2w, total depth 3310 ft, ur 6-inch.

Kyser et al's Stroot 1, sw nw 8-26-2w, drilling 600 ft.

(Continued on page 44)



Sedgwick County, Kansas, showing completed wells and drilling tests.

Gonzales County Production Differs From Neighboring Fields

The Texas Company makes lease purchase which gives it with Empire Company control of most of promising acreage; number of locations made

By JACK LOGAN
Staff Representative

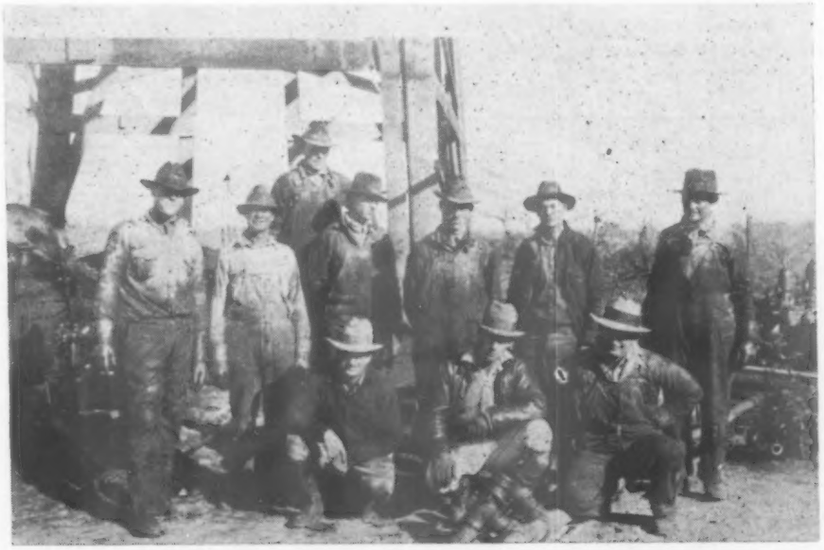
LULING, Texas.—Although no actual drilling has been started, several locations have been made, and there has been considerable trading in leases and royalties in the area opened recently in northern Gonzales County by Empire Gas & Fuel Company's wildcat producer, Norwood 1.

The most important transaction during the past week was the acquisition there by The Texas Company of practically all of the extensive holdings of J. P. Johnston. The acreage involved in this deal comprised 11 tracts ranging in size from 42 to 90 acres, and aggregating over 750 acres in all; the leases being scattered, and in various directions and distances from the discovery well. Prior to the acquisition of these leases, The Texas Company already had around 300 acres close to the well; and so now, with a total of over 1000 acres, it is probably the largest lease holder in the area, with the exception of Empire Gas & Fuel Company.

Empire Gas & Fuel Company obtained its leases from George C. Sullivan, independent operator and drilling contractor of Luling, who had blocked up extensive acreage; and the holdings of that company includes several thousand acres. Other major companies now interested in the area include the Pure Oil Company, Humble Oil & Refining Company, Simms Oil Company and others.

The greatest play has been in a strip about two miles wide and six or seven miles long, the length extending in a northeast-southwest direction. The assumption, apparently, is that this is another fault proposition, and that the trend of production, in the event such is developed, will be typical of the various other fault fields of this part of the state; that is, of the Balcones system of faulting — in a northeast-southwest direction along a somewhat narrow line. If this assumption proves to be true, the Gonzales County field will be parallel with the new salt Flat field, in Caldwell County, six miles to the north, and with the old Luling field, six miles beyond the Salt Flat field.

In background is Empire Gas & Fuel Company's Norwood 1, *and in foreground is derrick going up for the first offset—Cranfill & Reynolds' Webb* 1.



Workmen at new Gonzales County wildcat producer. The three men in the front row are Drillers R. D. Bolton, Wallace Riley and C. D. Reed, reading from left to right.

New Horizon for Area

However, the Gonzales County wildcat is not producing from the Edwards lime, like the Salt Flat and Luling fields; and it is considerably deeper, and the oil is of different gravity. Salt Flat is producing 35 to 37 gravity oil from the Edwards around 2700 feet, while the old Luling field is yielding 28-29 gravity oil from the same formation around 2200 feet. The new Gonzales County well is giving up an unusually black oil that tests 32 gravity; and the production is apparently from approximately 25 feet of sand and shale in the base of the Taylor marl, the bottom of the hole being at 3779 feet, a few feet in the Austin chalk. After penetrating the oil bearing sand and shale in the marl, the hole was carried about seven feet into the Austin chalk and a core was taken, showing the chalk to be dry. The top of the Taylor marl was encountered around 3717 feet, and there was a total of 55 feet of the Taylor marl, in which the oil bearing sand and shale were found.

Ten-inch casing was set at 270 feet, and 6⅝-inch was swung at the top of the Taylor marl. The drilling here was com-

paratively easy, being mostly through shales.

In other respects, also, the costs of drilling the discovery well were comparatively low. The test is located only 150 feet from the Gonzales-Luling hard-surfaced highway, at a point about six miles from Luling and 13 miles from Gonzales, and so transportation costs were nominal; and water and natural gas for fuel for drilling were easily available. The well is only about one mile from the San Marcos River, and a natural gas line runs within 300 feet of it; and water and gas were obtained from those sources.

Equipment used in drilling the Norwood 1 included rotary and draw works made by the Oil City Iron Works; and engine, pumps and boilers of the Oil Well Supply Company.

The well came in about a week before Christmas, flowing by heads and making around 300 barrels per day, but because of not having storage facilities up, mud was pumped in to hold the production down. The owner put up four 500-barrel Maloney steel tanks, following the discovery of the pay, and those tanks were soon filled.

No arrangements have yet been made for piping the oil from the well, although Magnolia Pipe Line Company was negotiating with the Empire Gas & Fuel Company before Christmas in regard to laying a line from the field to Luling. The latest reports from the well showed it rigging up standard pumping equipment, and predictions were that it would make around 500 barrels per day pumping.

Location

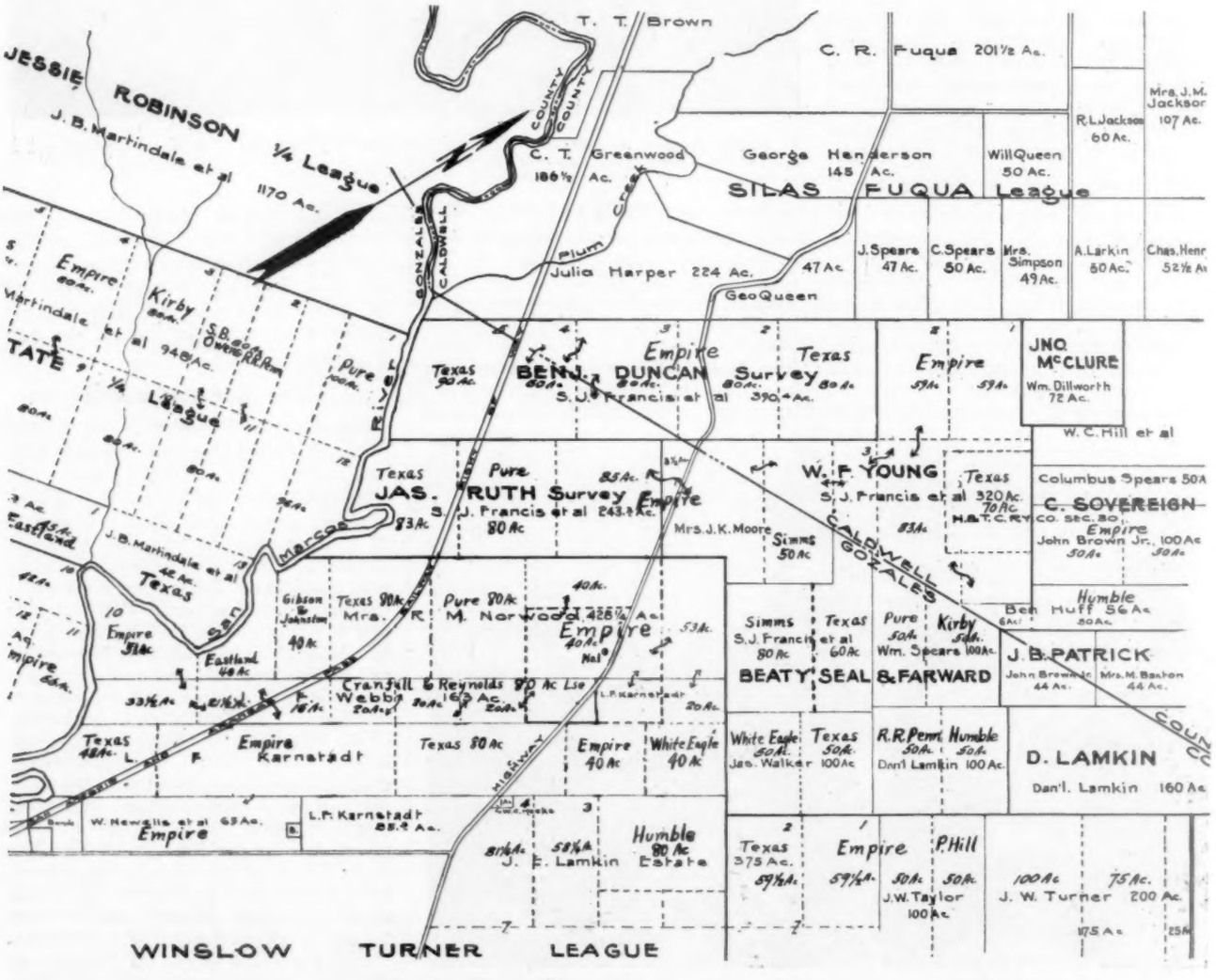
The wildcat producer is 2050 feet west of the east line and 450 feet north of the south line of the Winslow Turner league in the 428-acre tract of Mrs. R. M. Norwood. It is about a mile northeast of Ottine, a station on the S. A. & A. P. railroad, and is just on the Gonzales side of the Gonzales-Caldwell County line. It is about six miles southeast of Luling and 13 miles northwest of Gonzales.

This general area has long been considered a favorable prospect for oil production, the earliest efforts to uncover oil having been in 1903, when various shallow tests were drilled within the triangle formed by the towns of Ottine, Slayden and Harwood, on the strength of gas bubbles, and resulted in finding a little oil in several tests south of the present production.

The present development is the direct result of the efforts of George C. Sullivan of Luling, independent operator and drilling contractor. Realizing the possibilities of the district, he assembled an extensive block of leases—about 9000 acres; and Phillip Maverick, consulting geologist of San Angelo, Texas, made the location for the present producer after working out the geology on the block. Mr. Maverick, assisted by Henry Conkling of San Angelo, worked the block of acreage with the magnetometer.

Mr. Sullivan drilled this well, which is the discovery well; and he finished the hole, although in the meantime, he had made a deal with the Empire Gas & Fuel Company transferring his entire block, including the discovery tract, to that concern. G. E. Goddard of Fort Worth, division superintendent of Texas and Oklahoma for Empire Gas & Fuel Company, made the deal with Mr. Sullivan for his company.

Empire Gas & Fuel Company has established offices in Gonzales, following the wildcat strike; and J. A. McCudden is in charge of the new area.



Ownership in New Gonzales County Area.

North Winkler Takes Turn Favorable for Production

SAN ANGELO.—Development on the Scarborough Ranch in North Winkler County took a favorable turn early this week when the Magnolia Petrolium Company's Scarborough 1 began flowing at rate of 450 barrels of clean oil daily from Broken Sandy lime pay at 2862 to 3020 feet. This producer is located in the NW corner of the NE quarter of the SE quarter of section 1, block "C-22," and a short distance southeast of the original Llano Pool discovery wells, which are owned jointly by the Shell Petroleum Corporation and Llano Oil Company. Shell & Llano's two pumpers on the Scarborough Ranch hardly rate being called commercial producers, and because of the absence of a market outlet the wells were shut in last summer when arrangements were made with W. F. Scarborough to pay advance royalty on same. This plan was terminated on January 1, and operation of the wells resumed, while Shell built a four-inch line from same to tap Humble's line in the Daugherty section of the Llano area. Leases held by a dozen major companies and independent operators on the Scarborough Ranch now have clouded titles, owing to Mr. Scarborough having refused to accept rental payments last October. The latter notified the lessees some months prior to rental dates that development must be started, and Magnolia was the only concern to drill, but this was largely due to Magnolia practically having an offset to the discovery well. The performance of the Magnolia well in its semi-completion stage serves to encourage development work in the area, and a compromise may be worked out between the lease owners and Mr. Scarborough without taking the matter to the courts. Although no dry holes have been drilled in the three-mile interval between the original Llano Pool pumpers and the flowing wells on the Daugherty land, the two areas now appear to be on separate structures. The oil produced in the Llano pool ranges from 35 to 37 gravity, and carries little gas, while a heavy gas flow is encountered above the oil horizon in the wells completed to date on the Daugherty land. Empire Gas & Fuel Company's Daugherty 2 was tested early this week at 3150 feet, and flowed 70 barrels of clean oil in 12 hours, with an estimated flow of five million feet of gas. Entering its sixth week of almost steady production gains, the Texon Oil & Land Company's University 1-B, Big Lake field, gauged 1467 barrels of 53 gravity oil and 16 million cubic feet of gas during the 24 hours ending January 8 from the world's deepest pay at 8523 feet. The gas flow has increased about four million feet within the past four days, while during the same period the oil flow gained 100 barrels.

W. A. Moncrief-F. P. Zoch et al's wildcat test on the J. H. Tippett ranch, northwestern Crockett County, developed a flow of 2,500,000 cubic feet of sweet gas late last week at 1153-70 feet, and encountered salt water below this gas pay. The test is located about 15 miles northwest of the Yates shallow field, and near the center of the northeast line of section 45 H&TC Ry. survey, block 31, but in section 1, block "J-H." It logged the top of the salt at 640 feet, with a surface elevation of 2317 feet.

The south end of the Yates field contributed another large producer early this week when the Mid-Kansas Oil & Gas Company and Transcontinental Oil Company's M. A. Smith 4, section 31, block 194, flowed 150 barrels per hour while drilling into regular pay at 1425-1600 feet. This test logged the top of the lime at 1455 feet, with a surface elevation of 2790 feet, and will be carried deeper in search of the big pay. Another failure was chalked up against the north end of the Yates field during the past week when the Yates Ranch Oil Company's I. G. Yates 1, section 70, block 1, I. & G. N. survey developed water at 1648 feet, and was ordered plugged in anhydrite formation.

Several new producers in the O'Brien pool, located in Southern Winkler County, were in process of completion early this week, including Gulf Production Company's G. W. O'Brien 3, located near the center of the west line of section 31, block "F." This test was making some gas with one-half barrel of oil per hour from lime pay encountered at 2890-2900 feet after topping the lime at 2700 feet, with a surface elevation of 2721 feet. Simms Oil Company & Southwest Oil Production Company's Sealy 1, a west offset to the above test, logged the top of the lime at 2661 feet, and cemented 8-inch casing at 2679 feet, with prospects of being the highest test on structure among those drilling. L. H. Wentz et al's Tobe Morton 1, which pushed production three location to the north of the discovery well, is flowing 30 barrels per hour by heads at 2842-3005 feet, with no water showing to date. Marand Production Company's Morton 1, located south of the above, is showing oil and gas while drilling by tools at 2830 feet.

Pogue's Review Shows Industry Facing Grave Situation

IN his annual report of the petroleum industry, appearing in the New York Sun, January 3, Joseph E. Pogue, consulting petroleum engineer, of New York, sums up the results for 1928 and states that the industry is faced with the most extensive wildcat drive in its history. Among his various comments on the oil situation, Mr. Pogue wrote, in part, as follows:

"The two most conspicuous developments in the petroleum industry during 1928 were the establishment of sufficient restraint in the current production of crude petroleum to bring about equilibrium between supply and demand during the season of maximum consumption, and an improvement in the price of gasoline which led to a substantial betterment in the earnings of oil companies, particularly those engaged in the manufacture of that commodity. The feature of greatest financial interest during the year was the improvement in oil company earnings, which became known during the second and third quarters and was followed by a sharp advance in the quotations of oil securities. The primary cause of the betterment in earnings was a rise in the price of gasoline through the spring and summer. The fundamental reason for the improvement in the price of gasoline was an antecedent period of extremely low prices, extending back through most of 1927, which slowed down the rate of manufacture, led to a substantial reduction in gasoline stocks and, what is even more important, practically put a stop to expansion in refinery capacity and the construction of new cracking stills.

"The restraint effected in respect to crude oil production, coupled with the improvement in earnings, have given rise to considerable optimism in some quarters that the petroleum industry has made signal progress in its task of rationalizing the oil business, and a prompt return to prosperity and soundness is under way. A careful analysis of the situation, however, emphasizes the magnitude of the problem that confronts the petroleum industry and raises the question whether, despite the progress obviously made in many directions, the industry is yet properly organized and equipped to place its operations on a sound footing through the administration of the new force of rationalization. In the first place, in the writer's opinion, the petroleum industry has made a fundamental mis-

take in confining its efforts at restriction to proven fields, leaving wildcatting and search for new fields uncontrolled. It is worthy of note that recent months have witnessed one of the most successful wildcat campaigns in the entire history of the oil business, and in consequence the industry must cope with a larger potential production by far in 1929 than was the case in 1928. In this respect the oil industry has lost ground instead of making headway.

"The improvement in gasoline prices experienced in 1928 has stimulated not only a high rate of gasoline manufacture, running into overproduction in the closing months of the year, but it has also given rise to a vigorous campaign of refinery expansion and construction of new cracking equipment. Thus, the industry enters 1929 with the economics of its gasoline position entirely reversed from that of a year ago, when the rate of manufacture was low and expansion in plant equipment had virtually come to a standstill. The situation is also complicated by the belief, still apparently widespread, that the improvement in gasoline prices in 1928 and consequently in oil company earnings was the result of planned regulation of supply, both in crude and gasoline, and not the outcome of the prolonged and painful working out of economic law in the field of gasoline.

"On the whole, the petroleum industry faces 1929 with overproduction imminent, inventories still on the upgrade, vigorous refinery expansion under way, and one of the most effective widcat campaigns in the history of the industry in progress. To meet this situation, the industry has developed a partial form of control, or rationalization, which still needs to be co-ordinated and to be consolidated along sound economic lines. Has the petroleum industry developed the requisite economic foresight and knowledge to solve the critical problems now facing it and to salvage its past economic mistakes? That is the interesting question to which 1929 may provide an answer."

Texas Crude Runs From Panhandle to Start

Amarillo, Texas.—Movement of crude from the Texas Panhandle district to tidewater via The Texas Pipe Line Company's eight-inch carrier, which has been completed, is scheduled to begin this week. This trunk line gives the district four separate pipe line outlets to major refining and marketing points, and also an active crude buyer. The Texas Company's line extends from its Gray County tank farm and gathering system to the South Vernon district, Wilbarger County, where a connection is made with the company's original North Texas system. About 157 miles of pipe was required to tap the Panhandle district, and the capacity of the line is about 10,000 barrels daily, although it could be materially increased by adding more main line stations.

The Texas Pipe Line Company completed and began operating about January 1, a six-inch extension line from the Panhandle, Carson County, end of its system to Amarillo, and is pumping about 2500 barrels daily. This line serves the refining plant purchased about November 1, 1928, by The Texas Company from the Amarillo Refining Company.

Current production in the Texas Panhandle district is 58,610 barrels daily, and of this amount The Texas Company is producing about 6,900 barrels, including 6,250 barrels of high gravity oil found in Gray County. The Texas Company will make an active campaign for crude for purchase in order to supply its trunk line system and also the Amarillo plant. The combined trunk line capacity of Texas Pipe Line Company, Humble Pipe Line Company, Gulf Pipe Line Company, Magnolia Pipe Line Company and Prairie Pipe Line Company is now about 100,000 barrels daily, and local refinery demand within the Panhandle district leaves less than 50 per cent. of the trunk lines loaded, unless withdrawals are made from crude stocks.

The Texas Pipe Line Company was the first major company to make a survey for a pipe line to the Panhandle, but postponed building because of disappointment met with by The Texas Company in its early drilling in the district. The company came into its own within the past year when Gray County took the lead on developments, and is now in possession of a large volume of proven and semi-proven leases that will be drilled up as needed. The bulk of The Texas Company's leases are located in the Lefors and Bowers pools. Heretofore, all oil produced has been sold at the well; stored in large tanks; or transported on a common carrier basis by the jointly owned line of Gulf Pipe Line Company and Magnolia Pipe Line Company to the Ranger district, where the crude was turned over to The Texas Pipe Line Company for final movement to Port Arthur.

The Bills Would Help, But--

WE have read the proposal contained in the report of the Committee of Nine regarding legislation designed to assist the oil industry in its present dilemma.

If the bills suggested could be put into effect and enforced as they have been written by the committee, undoubtedly the oil industry would receive immediately benefit therefrom.

The great fear which The OIL WEEKLY has is that these proposed bills if they are passed in any form will be so unrecognizable that the Committee of Nine would see very few of the traits of its original parents in it.

We have discussed the matter with friends in the oil business, both operators and attorneys. Some take the position that the bills are logical and enforceable. Others maintain that the bills could not be enforced even if they could be passed.

This thing of going to the legislature and requesting them to tamper with this situation through the passage of laws expressly affecting the oil business, which laws possibly would involve extensions of contracts and compulsions that would be sure to arouse dissension, is something that should be resorted to only as the last stand.

Mind you, we do not take the position that the laws as suggested would not materially relieve the present situation, but we do take the position that when the oil industry goes to legislation with proposed bills that the minute it is taken up by the legislature that it is in the hands of enemies as well as friends of the oil industry and what an enemy could do to those bills would be a pity.

If this stand is reasonable you may ask, what then can the oil industry do?

To which we reply that if out of the turmoil of requested legislation the country can begin to appreciate the fact that certain anti-trust laws are a deadly pitfall to one of America's greatest industries and if these pitfalls can be removed and then the oil industry cannot clean its own house, the time will have arrived for the taking over of the oil business by the state or federal governments, which to some extent the proposed legislation foreshadows.

Bar Committee Makes Report Proposing Legislation

Acts drawn for introduction in various state legislatures would permit cooperative development of oil pools and compel minority to comply

THE Committee of Nine, appointed by the Federal Oil Conservation Board, consisting of three representatives of the Federal Government, three representatives of the American Petroleum Industry, and three members of the mineral section of the American Bar Association, to study the problem of conserving the petroleum resources of the country, after recommending a specific bill to be passed by congress as a conservation measure, relieving oil operators in certain contingencies from the provisions of the Federal Anti-Trust Acts, with proper safeguards in the public interest, urged similar legislation on the part of the important oil producing states, and also indicated that further investigation should be made into the necessity of state legislation, looking to the co-operative or unit development and operation of oil and gas pools to prevent waste, and as an aid to conservation. At the Seattle meeting of the Section, this committee, among other things, was directed to pursue the study suggested by the Federal Oil Committee of Nine. According to our understanding of the authority so conferred, we have addressed ourselves to the consideration of the following questions: First, is there necessity in the important oil producing states for legislation, clarifying the application of the anti-trust laws thereof to the producing activities of oil and gas operators; if so, what should be the form of such legislation? Second, is there necessity in such states for the unit or co-operative development and operation of oil and gas pools as a means of furthering the conservation of these minerals? Third, if so, should these objects be achieved through the voluntary efforts of oil and gas operapotors, or should they in some degree be compelled by the police power of the states. Fourth, if compulsory unit or co-operative development and operation should be resorted to for the purposes here indicated, what should be the form of the legislative enactment or enactments? Your committee, after full consideration, has concluded that legislation of some kind is necessary, touching these matters, and, by way of suggestion only to the Federal Oil Conservation Board, the American Petroleum Institute, and the various local oil and gas associations in the important oil producing states, submits two bills, together with the analyses embodied in this report.

Your Committee's Point of View

THE Federal Oil Committee of Nine, in its report of January 28, 1928, to the Federal Oil Conservation Board, prefaced that document with this statement: "We take it that true conservation does not mean the with-holding from present use of the Nation's natural resources. It does mean that those resources should be drawn upon without waste, and in orderly response to the economic needs of the country." To that principle your committee fully subscribes, but, unfortunately, the very nature of the business and the property rights which pertain to oil and gas holdings have prevented the application of the principle in the petroleum industry. Oil under existing conditions cannot be produced in orderly response to the economic needs of the country. From the standpoint of the public interest, there are certain fundamentals which must be stressed at the outset: First. Petroleum and natural gas are irreplaceable natural resources. Secondly. Unlike the other irreplaceable and basic minerals, iron, coal, copper, zinc, and lead, the extent of the underground supply of oil reckoned over a considerable period of years in the future cannot be determined. Making due allowance for the acute state of overproduction which has characterized the industry in recent years, and which promises to continue for some time in the future, for the large South American production which may suffice as a reserve to our own supply, for the improved methods of finding and producing oil, and for our experience in constantly uncovering new pools, whether needed or not, and the discovery of deeper producing formations, both in new and old fields, the indisputable fact still remains that no finite mind either knows, or can even be able to approximate, how long this country shall have an adequate supply of crude oil to meet our petroleum needs, and particularly how long these needs may be met at prices that are fairly reasonable. Third. Then to these considerations we must add the factor of indispensability. This element finds its demonstration in two simple questions: What, under our present economic structure, would become of American industry if it were to be deprived of an adequate and continuing supply of petroleum products at fair prices? What, in the light of modern methods of warfare, would become of the national security if our government in time of armed conflict were to be deprived of adequate petroleum supplies for military, naval, and aviation needs. Granting that our reserves of petroleum may be sufficient for every use for 10 or even for 20 years, the problem yet remains: Conservation, as a national policy, particularly in relation to a natural resource, possessing the three characteristics just alluded to, of necessity must imply a long-range view of the situation. Thus tested, and from the viewpoint of the public interest, prudence counsels the employment of every legitimate and constructive measure that will conserve, or tend to conserve, our petroleum supply.

In another respect, there is reason for public concern in this matter. For some years the producing branch of the petroleum industry has conducted its operations either at an actual loss or upon a profit basis totally incommensurate with the financial hazards incident to finding and producing oil. Primarily, this is due to the intensely competitive drilling of oil pools which puts it beyond the power of the industry to balance supply with demand. From one point of view, this problem concerns the industry and not the public, but when we consider the predicament in its deeper significance it is of consequence to the public as well. The interdependence of American industry and commerce is a recognized and inherent incident of our whole economic structure. Petroleum products intimately and vitally touch every department of human endeavor in the country. While this observation holds true generally, it is strongly emphasized in the relationship which the petroleum industry bears to certain other basic industries, namely, steel, automotive, machinery, and the railroads. Each of these enterprises, in particular, contribute largely to the economic well-being of the others. In the nature of things a serious maladjustment in one of these great industries must react upon the others. Then the depression in the outstanding industries influences a similar condition throughout the industrial and commercial life of the nation. From this it must follow, that if the American petroleum industry is in a chronic state of economic maladjustment, the consequences in one degree or another affect all the people. Therefore, the problem before us, that of the competitive drilling and operation of oil pools, is not only the affair of the industry but of the public as well.

The Problem That Must Be Met

THE competitive drilling of the il and gas pools of the country not only prevents the petroleum industry from overcoming the vice of overproduction in relation to an irreplaceable and indispensable natural resource, the extent of which is unknown, but it produces other economic evils. For one thing, and in an important degree, it increases development

costs which must be passed on to the consumer in the guise of price, or such costs must be absorbed by the industry. The latter alternative which is more likely to prevail is one of the causes of meager or no profits in the business. But rising far above the consideration just stated, from the standpoint of conservancy, is the fact that the intense competitive drilling of a pool results either in the dissipation or the inefficient use of the gas energy which is the chief agency in producing oil. This means that oil is left in the ground that should be recovered. Again as a necessary incident of competitive drilling, far more oil is held in expensive steel storage attended by carrying charges in the form of taxes, insurance and interest on investment which mount to large sums that must be passed on to the consumer or absorbed by the industry, than is currently required by the refineries of the country. From every conceivable point of view, this excess of petroleum in steel storage should be confined to its natural habitat under ground. To this point we are but restating observations that have been put forth by every authority that has had occasion to speak upon the subject, the Federal Oil Conservation Board, the Federal Oil Committee of Nine, the American Petroleum Institute and the leaders of the petroleum industry generally. The difficulty does not lie in any failure to perceive that competitive drilling is the evil to be remedied, but in finding and applying the practical and efficient remedy or remedies.

The Basic Remedy

TO one who studiously has investigated these questions will dispute two propositions: First, that the most practical and efficient method of meeting the uneconomic competitive drilling of an oil and gas pool is voluntary action on the part of the operators interested therein to merge all of their holdings in such manner that the pool can be developed and operated as a single property. This is the so-called principle of unit development and operation. Secondly, if this device cannot be brought into general acceptance, the alternative should be an agreement among the operators in the same oil and gas pool for the development and operation of their respective separate holdings in accordance with the same methods that automatically would be applied if all the properties were merged for the purpose of unit development and operation. Stress is laid upon the voluntary unit plan, because under that condition conservation in its true sense proceeds from the self-interest of the operators concerned. These would be the natural results attending the merging of all properties in the same oil and gas pool for unit development: First, such wells only would be drilled as would be consistent with a fair profit, and, at the same time, recover as much of the oil content of the pool as possible. Second. Assuming the participation of the royalty owners in the agreement, the necessity of line drilling would be obviated. Third. Drilling and producing activities could be accelerated or retarded, depending upon the current market demand, a privilege which is now enjoyed by every industry save the petroleum industry. Fourth. A method common to the entire pool for the conservation of the original gas energy, the chief propulsive force in the production of oil, in the opinion of petroleum engineers, could be adopted, and this would result in two things important to the cause of conservation—the orderly production of oil from the pool, and a larger ultimate oil recovery. Fifth. A method common to the pool for the injection of gas, air, or other substances or vapor into the producing formation, or formations, to restore pressure for the two purposes just indicated, when this course should be justified by the producing condition of the pool.

Recognizing the soundness of the principle of voluntary unit development and operation, the petroleum industry is making some progress in its application, but not to an extent that is especially reassuring. Three practical obstacles are present: To begin with, the principle is hardly adapted to a pool that has been brought into production, even by the discovery of one paying well. The reason for this objection is that a discovery establishes conflicting opinions among the operators interested in the pool regarding the relative value of their respective holdings. The tendency of this condition is to prevent a general agreement for the merging of the entire acreage in the pool. Secondly, even where there has been no discovery, an operator or several operators in the pool may conceive that their properties are so located on the structure that they possess a greater relative value for the purposes of unit development and operation than their associates in the pool are willing to agree to. Hence the project fails. Third. The obstacle of the royalty owners. Few, if any, existing oil and gas leases provide for the merging of the royalty interest in a plan for unit development and operation. While occasionally unit development is brought about without the express merging of the royalty interests, the arrangement presents both practical and legal difficulties. To gain the consent of all the royalty owners to a project of this sort is an added impediment.

The second proposal to meet the problem of competitive drilling of an oil and gas pool through voluntary action on the part of the petroleum industry, is an agreement among the operators interested in the pool to develop and operate each separate holding therein in accordance with certain prescribed methods and practices. In the main, these would accord with the methods that automatically would be resorted to should the properties be merged for unit development. The clear advantage of this expedient over the other voluntary project would be that the relative value of the properties involved, whether real or imaginary, would be preserved. If one lease by reason of its favorable location on the structure were capable of producing more oil than another, or all of the other leases in the pool, the owner thereof under this scheme would have the full benefit of his good fortune. Again, the royalty problem incident to an agreement for cooperative development and operation of an oil pool as distinguished from an agreement for unit development would be somewhat simplified. Your committee does not feel that it is within its responsibilities to express a definite conclusion upon the relative merits of a voluntary agreement for the unit development and operation of an oil and gas pool by the operators interested therein and a voluntary agreement among them for the cooperative development and operation of such pool. If opinion in the industry is to so develop that a choice between the two methods or the adoption of one or the other, depending upon the circumstances of the particular pool, is to be accepted as the sole remedy for competitive drilling, the later section of this report dealing with the question of compulsory cooperative development and operation of new oil pools, passes out of view.

Voluntary Agreements for the Unit or Co-operative Development and Operation of Oil and Gas Pools

IF agreements of the above character are to be the sole, or at any rate, two of the remedies for competitive drilling, the effect of the anti-trust laws of the federal and state governments, in respect of such agreements, merit attention. Viewed in their fundamental aspect, an agreement for unit development or an agreement for cooperative development results in a restraint upon production. The Federal Oil Conservation Board, in its original report, after recommending the two practices just outlined, adverted to the fact that the federal and state anti-trust laws were either a real or a pretended obstacle to the making of agreements of this character. Such was the conclusion of the Committee of Nine, appointed by the Federal Oil Conservation Board. The committee last named has formulated a bill for passage by congress which will meet the federal question. At the time this report is made, no agency so far as your committee is concerned has undertaken the task of formulating state legislation to meet the views of the Federal Oil Conservation Board. In this part of our report, your committee proceeds upon three assumptions: First, that agreements among oil operators in the same oil and gas pool, either for the unit development and operation of such pool, or for the cooperative development and operation of the same, will either solve, or aid in solving, the question of the competitive drilling of oil and gas pools. Secondly, that in the public interest as well as in the interest of the petroleum industry, that industry should have the same economic advantage that is accorded to all other industrial and producing enterprises, namely, the privilege of stopping or limiting production during periods of overproduction. Third, that whether the petroleum industry is legally justified in its position, that relief from the state anti-trust laws is necessary to protect it in the three types of agreement above indicated, or not, the fact still remains that the

cause of petroleum conservation has its practical as well as its legal aspects. In this view, your committee concludes that if the anti-trust laws of the oil producing states are obstacles to the things which the petroleum industry is seeking to accomplish as aids to conservation, those obstacles should be removed, regardless of technical considerations. It is for these reasons that your committee submits herewith a form of enactment to meet the attitude of the petroleum industry in respect of the anti-trust laws of the oil producing states.

Analysis of the Act Referred to Above

YOUR committee is agreed that as a legal proposition, agreements among oil and gas operators in the same pool for the unit or cooperative development of such pool would not be within the condemnation of the anti-trust laws of the important oil producing states, excepting perhaps the states of California and Texas, in respect of which your committee expresses no opinion. Your committee further believes that it is at least doubtful that an agreement among the operators of the same pool to restrict drilling or limit production from such pool during periods of actual overproduction therein would be within the purview of the anti-trust laws of the oil producing states save again the states of California and Texas upon which your committee is not informed. Agreements among operators of the same pool to restrict drilling or curtail production during periods of threatened overproduction in the pool present a question more open to debate and yet your committee viewing the matter more in its practical than in its legal significance is submitting a form of bill permitting agreements among operators in the same pool during periods of threatened overproduction. Your committee would have gone further upon this subject of overproduction were it not for the decision of the Supreme Court of the United States in Connelly vs. Union Sewer Pipe Company, 184 U. S. 540. We were of opinion that during periods of statewide overproduction the oil operators of the entire state should have the right to restrict drilling and to curtail production to equalize supply and demand. It is our conclusion that conservation in its application to petroleum justifies this course, but in the case alluded to it was held that the exemption of two industries from the anti-trust laws of the State of Illinois violated the equal protection clause of the Fourteenth Amendment. The question of exceptions to this rule on the basis of classification was discussed in the case and the doctrines thereof, especially in respect of legislative classification, has been substantially modified by the later decisions of the Supreme Court of the United States. Your committee even doubts the reaffirmance of the rule laid down in the Connelly case if the question again were to come before the Supreme Court of the United States. Nevertheless, your committee hesitates to recommend a state enactment which would exempt statewide agreements to restrict drilling and limit production or both during a statewide period of overproduction. On the other question of agreements to restrict drilling and curtail production in respect of single pools, there is no division of opinion on the part of your committee. The nature of an oil and gas pool and the correlative rights and obligations of the operators therein supplemented by the irreplaceable character of these minerals, and their importance to the public, would in our judgment uphold the measure we propose as a proper classification within the principle of the equal protection clause of the Fourteenth Amendment as interpreted by the Supreme Court of the United States. With these considerations in mind, your committee proceeds to analyze the anti-trust act submitted herewith.

(*a*)

The Title—The local oil organizations in respect of each state to which the work of this committee is to be referred should scrutinize the title to the act submitted herewith. Your committee was of the opinion that conservation rather than relief from the state anti-trust laws should be emphasized. This leaves open the constitutional question as to whether the purposes of the act are clearly expressed in the title. In a matter so important as an exemption from the general public policy of the state, the observations here made may assume pronounced importance.

(*b*)

Definitions—The question that arises here is that of certainty. The act proposed contemplates exceptions from criminal statutes. This being true, the matter of statutory certainty rises to high importance. The sufficiency of the definitions upon which the operative portion of the enactment are predicated, should be closely scrutinized by the local oil organizations which may assume to sponsor the enactment.

(*c*)

Operative Sections—Sections two and three are designed to sanction agreements among oil operators in the same pool for unit or cooperative development, or to restrict drilling and limit production, or both, during periods of overproduction, or threatened oveproduction in the pool. As the anti-trust laws of the oil producing states differ in their terms and interpretation, the local organizations should make sure that the provisions proposed meet their need in this respect.

(*d*)

Emergency Clause—Your committee made no effort to determine either the time or the conditions under which the proposed act should become effective. The clause necessary to accomplish this purpose must be supplied locally.

Compulsory Unit and Co-operative Development

TO this stage our report deals with voluntary agreements among oil and gas operators in the same oil and gas pool for unit or cooperative development or to restrict drilling and limit production during periods of overproduction or threatened overproduction in the pool. The all-important question in the American petroleum industry today and in the minds of the Federal Oil Conservation Board as well, is whether or not the petroleum industry through voluntary action can meet the problem of competitive drilling and therefore in its ultimate effect, the problem of conservation. Opinion in the industry itself diverges. Forwardlooking leaders are now reconciled to the necessity of some modified form of compulsion to prevent competitive drilling. But intense individuals in the business reject the idea vehemently. From the evidence assembled your committee is of opinion that voluntary action on the part of the industry will not in the near future, and perhaps never, meet the problem considered by this report. The reason for this conclusion is not far to seek. The answer lies in the never-changing dictates of human nature. A refiner holding a single lease in an important and prolific oil pool, needing the crude for his business, will drill without restraint and produce to capacity regardless of the fact that his operations necessitate the same intensive drilling and producing campaign on the part of every other operator in the pool. Again, a producer owning one lease in a pool driven by financial necessity or animated by the natural desire to make "hay while the sun shines" will act likewise regardless of the consideration that his operations will be followed by a similar intensive and speedy work by his competitors in the pool. From the narrow point of view, these practices cannot be condemned. On the other hand, with the problem of natural conservation at stake and taking into account also the correlative rights and obligations of the operators in the same pool, your committee cannot believe that this condition should be permitted to continue. The all-important question is this: In every pursuit save the petroleum industry a producer may either cease to produce entirely or limit his production to meet the market demand. Your committee is of opinion that one operator in an oil pool has the same constitutional right to refrain or limit his production as has another operator therein the right to drill without restriction and to produce to capacity. This conflict in purpose and interest coupled with the community nature of an oil and gas pool irresistibly suggests the solution of this important problem in the minds of your committee. The state under the police power may adjust and regulate these conflicting rights in a community property. No operator may be prevented from drilling and producing entirely and no operator may be permitted to drill without restraint and to produce to capacity. The law may step in and reconcile the position of both. It is for the practical reasons here stated,

and upon the basis of the legal theory here presented that your committee presumes to offer a type of legislation for the compulsory cooperative development and operation of an oil and gas pool.

Compulsory Unit Development

YOUR committee perceives no constitutional basis for compelling oil operators in the same pool to so merge their separate holdings that they may be operated as a unit. This in the judgment of your committee would constitute a taking and not a regulation of property. Therefore, if the police power of the oil producing states is to be invoked it must be in relation to a plan for the compulsory cooperative development and operation of oil pools. Such, at least, is the view of your committee.

The Concept of Compulsory Co-operative Development in General

YOUR committee submits its bill relating to this subject with the following considerations in mind: First. The preamble to the bill indicates that it is the purpose of the legislature to ground the exercise of police power in this connection upon two propositions. Primarily, upon the correlative situation of the oil operators and royalty owners in the same oil and gas pool. Since the statute proposed is designed to adjust and regulate the correlative position of the parties in interest, we are clearly of opinion that the exercise of the police power of the state in this regard is sustainable. The second constitutional basis for the proposed statute is that the legislation involves the public interest in conserving an irreplaceable and indispensable natural resource. Here, we recognize that we may be on debatable ground. Nevertheless, we believe that the tendency of the decisions would support the statute on this foundation also. The second important consideration which your committee continually respected presents a practical and not a legal phase. The business of producing oil is not only highly technical, but it is perhaps the most individualistic pursuit known to modern industry. Naturally, an oil operator in the development and operation of his property makes full use of his skill and experience in the undertaking, but other factors sometimes equally controlling, and at least always present, accentuate the individualistic aspect of the business. The financial daring, or the reverse, his idiosyncrasies and, in the vernacular of the day, his hunches, enter into his exploring and producing activities. When all of these elements are combined, the conclusion irresistibly follows that this enterprise could not, and should not, submit to any far-reaching scheme of governmental interference or regulation. This conclusion is just as much in the public interest as it is in the interest of the petroleum industry. Your committee in its proposal took these all-important considerations into account. The act submitted reserves to the industry as much freedom in the carrying on of its business as possible, consistent with the belief on our part that notwithstanding the necessity of preserving individualism in the enterprise, that individualism, in some degree at least, must yield to the correlative situation of the operators in the same pool and to the public welfare. Again, viewing the whole problem in its practical bearing, your committee appreciates that the proposed statute, or even a substantial modification thereof cannot be enacted in the four or five oil producing states unless it receives the general and whole-hearted support of a considerable majority of the industry. Hence, we proceed to an analysis of the provisions of the bill submitted by us for the compulsory cooperative development and operation of oil and gas pools.

The Compulsory Bill Analyzed

(*a*)

SECTION 1. *Definitions*—Your committee believes that the definitions of "oil and gas pool," "oil and gas operator," and of "royalty owner," are sufficiently accurate and descriptive. More thought however must be devoted to the definition of the term "cooperative development and operation of an oil and gas pool." And this is true for two reasons: To begin with, the subject itself is technical and intricate. In the second place, the essence of the bill resides in this concept. Throughout our whole study of this problem, we have been confronted with two conflicting purposes: A supreme desire to meet the wishes of the petroleum industry for as much voice in the regulations to be imposed as possible, and, at the same time, reconcile that necessity with the question of constitutionality. The committee believes that it has met the latter problem, but it leaves to the determination of the local oil organizations the sufficiency of its definition of "cooperative development and operation." This matter rises to high importance when we remember that the bill proposed contemplates the formulation by the operators involved of the particular cooperative plan that is to be submitted by them for the approval of the state conservation agency.

(*b*)

Section 2. Jurisdiction—Your committee ventures no comment upon this simple provision.

(*c*)

Section 3. Conditional jurisdiction of the commission to compel cooperative development and operation—This provision carries out the purpose of your committee in suggesting as much self-government by the industry as the object to be achieved will permit. The machinery of the state is provided for, but whether or not it shall ever be invoked depends upon the will of the industry itself. We here provide that a majority of the operators in the same oil and gas pool shall have this right. We perceive that there is no magic in the idea of majority. The authority of the state may be resorted only when two-thirds or even three-fourths of the operators in the same pool unite. A decision between these possibilities is left to the local oil organizations. Your committee does believe however that there is merit in its definition of the word, "majority"; that is to say, that a numerical majority, a majority of the acreage, and a majority of the production, should come into the equation. If it should be determined that two-thirds or three-fourths of the operators in interest must agree before the act becomes effective in relation to the pool in which they are interested, it is our opinion that to establish fairness and equality the three elements just alluded to should be represented.

(*d*)

Section 4. The Petition—Your committee debated at some length the question as to whether the bill in specific terms should set forth the necessary allegations of the petition to invoke the jurisdiction of the conservation agency or whether that should be laid down in general terms. Since the petition conditions the jurisdiction of the conservation agency, we finally concluded that it would be an advantage to the industry precisely to know the allegations which would support jurisdiction.

(*e*)

Section 5. Notice of hearing, hearing, rules, regulations and enforcement. If a distinction can be drawn in the importance of the several provisions of the proposed bill, the one dwelt upon here merits that consideration. The provision when read in connection with the entire bill involves the following propositions: First. A studied attempt by the committee to preserve freedom of action on the part of the industry. The cooperative plan to be applied to the particular pool is intended to be the one agreed upon by the majority operators. The commission may reject the plan proposed, but it cannot modify it. The second question involved in this provision is the matter of service by publication on non-resident operators and royalty owners and on operators and royalty owners whose addresses are unknown to the petitioners. This brings into view the distinction between proceedings in rem and proceedings in personam. As the bill primarily involves regulations upon the use of real property, we finally took the view that service by publication would be sufficient. We do not pretend to say that we are absolutely right in this position. In any event, the determination of the question should be left to the local oil organizations to be considered in the light of the local statutes and decisions. Third. The great difficulty in this provision is to be assured that the machinery laid down here will stand the test of constitutionality. On both principle and authority, one group of property owners cannot prescribe the manner in which another group may use their property. The principle applies even where property partaking of a community nature is involved. Under

this provision, however, the ultimate act is that of governmental agency. To this consideration must be added the further one that the definition of co-operative development and operation in itself lays down a rule of conduct. Here, the legislature pronounces that the co-operative plan must be within the legislative purpose. While your committee appreciates the difficulty of the question, we agreed upon the proposition that this section of the bill is constitutional. In further defense of our recommendation in this respect, we will say that the probabilities are that the petroleum industry would never accept the principle of compulsory development and operation of oil pools unless it were to be restricted in the manner set forth in this section. As bearing upon the constitutional distinction between a prescribed use of property at the mere will of other property owners and the ultimate sanction of that use of an official agency, we cite Eubank v. Richmond, 226 U. S. 137; Goried v. Fox, 71 L. ed. 1228; Miller v. Schoene, 48 Sup. Ct. Rep. 246.

(*f*)

Section 6. *Operators committee*—This provision has as its purpose the reserving of self-government in the industry. Broadly stated, it is the design of the bill that a committee appointed by the operators in the pool, consisting of operators therein, or their representatives, the appointment to be sanctioned by the conservation commission, shall police the administration of the plan imposed. It might be urged that this committee should be given broader powers. This possibility has had the full consideration of the committee and was rejected because of the fear of constitutional objections. Having provided for a committee of operators who themselves are interested in the pool, we safeguarded the situation of the other operators therein by placing at their disposal the services of the chief conservation officer of the state to investigate any suspicion or belief on their part that any other operator in the pool was violating the plan.

(*g*)

Section 7. *Specific enforcement of the plan*—From the evidence reviewed by the committee, we were not only convinced that the only effective method of enforcing a compulsory co-operative plan was the specific enforcement thereof, but also that this enforcement must be prompt and summary. Considering the peculiar nature of the property dealt with, a money penalty for the violation of the plan does not protect the other operators in the pool, and, furthermore, a violation may not proceed even for a brief period without resulting in disaster to the other operators. In the main, the method of specific enforcement laid down here was drawn from the Federal Trade Commission Act. Two further considerations of distinct importance are involved in this Section: First, it is provided that the Court called upon to enforce the plan may permit the introduction of new evidence by both parties. Your committee concluded that this precaution might be necessary to meet the question of due process. Secondly, it is provided specifically that the mandatory injunction, or the receivership for enforcement cannot be stayed or superseded pending the appeal which is provided for in this section. This, on account of the character of the property dealt with, we regard as indispensable.

(*h*)

Section 8. *Supplemental rules and regulations.* This provision is prompted by the necessities of the case. If the co-operative plan should cover the time of drilling in order to limit production from existing wells on account of market conditions, it follows that this feature of the plan would be temporary in its operation. An increased market demand would necessitate an entirely different course of conduct. Therefore, the bill should be sufficiently elastic to cover this possibility. In the next place, the boundaries of a prospective oil and gas pool can never be accurately determined. That will depend upon the development of the pool. Keeping in mind always that the correlative situation of the operators in the same pool is the primary basis of the legislation, it follows that if the development of a pool necessitated the inclusion of additional land or the excluding of other lands not part of the pool that machinery to accomplish this purpose should be set up. Furthermore, the statute may be resorted to upon the drilling of a test well. That well may come in dry. Under those circumstances, the operators interested in the pool might desire to return to their former status. Another thing, as the development of the pool proceeds, the co-operative plan laid down might prove inefficient. Other methods for the development of the pool might be more workable. This section provides for all of these contingencies.

(*i*)

Section 9. *Suspension of drilling obligations.* No provisions of the proposed bill rises to higher importance than this one. At any time that the majority operators may agree upon a co-operative plan and apply to the conservation commission for the application of the plan to the entire pool, some operators therein will be confronted by express or implied drilling or producing obligations in their leases within the pool or with leases therein on the point of expiration unless production should be brought about within a very limited time. In almost any conceivable case it will be found that these outstanding obligations conflict with the cooperative plan. Unless the royalty owners can be brought within the compulsory provisions of the plan, the entire project must fall. This section assumes to perform this particular office. To begin with no general rule of conduct can be laid down to meet the situation of the royalty owner. The operator who is confronted by outstanding drilling or producing obligations or the probability of an expiring lease must invoke the jurisdiction of the commission for relief. No other workable method is perceived by your committee. This brings into view some very important constitutional questions. The point presented here is an act of the state legislature which violates the impairment of contract clause of the Federal Constitution. It is fundamental, of course, that this provision of the Federal Constitution rises to no higher dignity or sanctity than the due process clause. If the police regulation is reasonable, it will survive the impairment of contract provision as well as that of due process. Upon this reasoning, your committee is of the opinion that the provision in this section for the suspension of drilling obligations whether related to express covenants or to expiring leases can be upheld as a proper and reasonable exercise of the police power. On the other hand, the striking down of the implied covenants for further development and for production to capacity present a graver question. Since the purpose of the bill proposed is to adjust the correlative rights and obligations of all persons interested in the pool, whether operators or royalty owners, your committee is of opinion that this part of the section can be upheld. We do not pretend to say that our view in this regard is not debatable. We do think, however, that a case of this character properly presented would induce a holding that the royalty owners must yield to all of the provisions of this act.

(*j*)

The two remaining sections of the bill, 10 and 11, relating to appeals and to separability require no comment other than to suggest the importance of maintaining the idea that an appeal will not supersede any regulation of the conservation commission establishing a cooperative plan. This is vital. At this point, your committee will venture another statement. The proposed bill applied only to pools that are discovered after the act goes into effect. We recognize the impossibility or the improbability of the application of the principle of compulsory cooperative development and operation to develop pools.

Compulsory Limiting of Production in Single Pools During Over-production

YOUR committee has recommended but one measure involving downright coercion in respect of the minority operators of a pool, namely, that compelling the cooperative development and operation of the entire pool. The arrangement just alluded to contemplates more than the mere control of drilling and the rate of production from existing wells. It presupposes the application of a number of operating methods, both scientific and practical, to each separate property in the pool for the major purposes of bringing about orderly production and, through the efficient use of gas energy, to enlarge the ultimate oil recovery. This principle is put forth as a permanent and basic remedy to meet the problem of competitive drilling. But it must be remembered that the plan is restricted to new pools and does not take into account the emergency of overproduction or threatened overproduction that might characterize a number of old pools. To this stage, the only suggestion we have made to meet the condition last described is a unanimous agreement among all the operators in the pool to limit drilling and production during periods of actual or threatened overproduction. We have recommended the further process of state

legislation that will withdraw unanimous agreements of this nature from the penalties of the state anti-trust laws. But here another practical difficulty intrudes. From the evidence before us, we find that it is frequently impossible to secure a unanimous agreement among the operators in the pool to restrict drilling or production even during periods of overproduction. This arises from the necessities or from the definite self-interest of the objecting operator or operators. It is your committee's opinion that coercion should be applied here also, but we are by no means certain that the industry at present is prepared to go that far. Nevertheless, we feel impelled to suggest that a statute could be framed that would empower a majority or even a larger proportion of the operators in the pool to compel the minority to restrict drilling and curtail production, certainly during periods of actual overproduction and perhaps during periods of threatened overproduction, in accordance with a plan to operate equally throughout the pool. Concretely, we would say that the machinery for compulsion set up in the act submitted here might be extended so as to enforce drilling and producing limitations on an entire pool, whether new or old, during periods of actual or threatened overproduction.

In Conclusion

IN closing this report, your committee observes that the American Bar Association has no responsibility in this matter save that of promoting the public interest. An important agency of the federal government, consisting of four cabinet officers, appointed by the president, sought the aid of the American Bar Association in the solution of the questions partially presented in this report. The inquiry of your committee has involved serious economic questions as well as debatable propositions of law. We are convinced that the American petroleum industry will never find its proper place in our economic structure until it solves the problems that arise from the competitive drilling and operation of oil and gas pools. Whether that is to be accomplished by voluntary action in the industry or by the compulsion of law is yet to be determined. After an extended inquiry into the two possibilities, we have reached the conclusion that, by force of circumstances entirely beyond the control of the industry, comprehensive voluntary action is improbable if not impossible. Upon the basis of this conviction your committee proposes one compulsory measure. Beyond this, your committee cannot go. We understand that this report is to be filed with the Federal Oil Conservation Board, the American Petroleum Institute, and the local oil and gas associations in the important oil producing states. Whether these agencies will accept all or any of the suggestions made in this report does not concern the American Bar Association. We do feel however that with a presentation of this report, the association has discharged its full duty to the American public.

O'Garrie Heads Texas Production Department

R. O'GARRIO has been elected vice president of The Texas Corporation and of The Texas Company, in charge of all producing operations, domestic and foreign. He succeeds Dan J. Moran who resigned to become president of the Marland Oil Company. Mr. O'Garrio has served as assistant to Mr. Moran for a number of years.

Mr. O'Garrio is a civil engineer by training, a graduate from Sheffield Scientific School, Yale University, in the class of 1909. He was born in the state of Chihuahua, Mexico, but received his education in the United States. His elementary and preparatory schooling was at Saint Louis College, San Antonio, followed by three years of engineering work at the Massachusetts Institute of Technology, after which he entered Yale. He is a member of a prominent Mexican family.

After graduation and before becoming associated with The Texas Company, he was engaged for several years in the engineering profession in Mexico, and also served as an engineer for the Mexican Department of Public Works.

He has been connected with The Texas Company since October 10, 1916, when he entered the employ of that company's Mexican subsidiary at Tampico in the capacity of assistant engineer. He was transfered to The Texas Company's headquarters at Houston in December following, where he was engaged in the preparation of plans for the Tampico works, the Aqua Dulce works, pipe lines, gathering lines and other facilities. Upon completion of these plans, he returned to Mexico in March, 1917, to serve as construction engineer until the plants and facilities were completed.

Mr. O'Garrio was made assistant general superintendent of the refining and pipe line deaprtments of The Texas Company of Mexico in November, 1918, and was promoted to general superintendent a little more than one year later. After two years in the latter position, administration of the producing department was added to his responsibilities, early in 1922. In 1923 he was assigned to he supervision of exploration work in Panama and South American countries, and when The Texas Petroleum Company was organized to operate in those countries, he was named manager, in January, 1925.

Photo by Blank-Stoller, Inc., New York
R. O'GARRIO

C. O. Heggem, general manager of the Oil Well Improvements Company, died at his home in Tulsa, January 1, after a short illness of pneumonia. His wife, who was also ill of the same disease, died within six hours of the death of her husband without having been informed of his passing.

M. A. (Bert) Benear, chief scout of the Mid-Continent Petroleum Corporation, has been confined to his home with at attack of the influenza.

Gulf Coast Field Developments

Deep Well at Humble Makes Flow of High Gravity Oil

HOUSTON.—The old Humble field, the most prolific and one of the largest of all salt domes of the Gulf Coast, is again a center of interest as the result of the discovery there of a new deep sand that offers good possibilities. The well which found the new pay is Cullen and West Production Company's R. B. Morris 2 in the southeast part of the field. Its total depth is 5347 feet, and its initial production through a one-half-inch choke was 2500 barrels of 44 gravity pipe line oil.

Prior to completion of this well, the Humble field had an average daily output of around 3500 barrels, ranking comparatively low among producing fields of the Gulf Coast. But in all-time production, Humble ranks first, having to its credit a grand total of over 100,000,000 barrels; part of which came from the cap rock, while the rest was from various sands, particularly from 2800 to 3300 feet.

The new well of Cullen and West, incidentally, is the deepest producer ever completed at Humble. Heretofore the deepest producers were around 3700 feet; they included The Texas Company's House 20 in the north extremity of the field, which came in over a year ago for a 2800-barrel well at 3704 feet as the largest well completed in the field in many years. That part of the field, however, has not yielded large production since.

The new producer, Morris 2, is located 525 feet east and 40 feet south of the northwest corner of the W. T. Charles survey. It is an old well that has been deepened. It was completed originally in July, 1928, at 3036 feet, where its initial production was 500 barrels. The oil from that level tested 22.3 corrected gravity. The production declined and the well was put on the pump, and it was finally decided to deepen the hole.

Although the total depth of the hole is 5347 feet, the bottom of the producing sand is above that, at about 5300 feet. The drill stopped in a sticky shale. Six and five-eighths-inch casing is set at 2994 feet, having been set there for the original completion at 3036 feet; and below the bottom of the casing is the following: 81 joints of blank, sealed in the 6⅝-inch casing; two joints of screen; 18 joints of 4¾-inch blank; four joints of 4¾-inch screen; and two joints of blank. Although there are thus two joints of screen separated from the bottom four joints of screen by 18 joints of blank, the production is said to be altogether from the lower level, through the bottom four joints of screen.

This well came in early Thursday morning, January 4. Soon afterward, gauged for one hour on a three-quarter inch choke, it produced 5200 barrels; and later, cut down to a one-half inch outlet, it settled down to 2500 barrels. During the 24 hours on Monday of this week the well produced 1957 barrels, still pinched in; and its production was still pipe line oil, containing only four-tenths of one per cent. sediment. The corrected gravity, according to the latest available report was 44.6 and the temperature was 51 degrees.

The production is being handled by The Texas Pipe Line Company, which laid a line to the lease last summer to take care of the production at the time of the original completion of this well.

The Texas Company has all acreage over a wide strip to the north of the new producer, as well as large holdings to the west of it. There are several producers in this part of the field, but none has been drilled to the deep pay.

The oil from the Morris 2 is interesting for its high gravity, being exceptionally high for a Gulf Coast field. The oil heretofore produced at Humble has varied from 22 gravity upward, but not above 36 gravity. Morris 2 production is rich in gasoline content, and the oil is greenish in color.

Considering the prolific production during the past few years from the mile-deep sands at Spindle Top, after that field was generally considered an exhausted source of oil, any Gulf Coast field which promises to give up deep production is given serious attention, and the new Cullen and West well together with any activity which it may initiate will henceforth be of considerable interest.

Second Well Producing From Deep Sand at Barbers Hill

HOUSTON.—A second well has been completed in the prolific mile-deep sand on the northeast flank of Barbers Hill dome, Chambers County—the sand which was discovered early in October, 1928, by the Mills Bennett Production Company's W. C. Smith 1. This second well in that sand is the Humphreys Corporation's Kirby C-1.

The well is producing 27.5 degree gravity pipe line oil, temperature 80 degrees, from a sand at 5172-5231 feet. It was completed late last week, and during the first 26 hours produced 2460 barrels. On Tuesday of this week it was reported making 1740 barrels of pipe line oil daily.

This well of the Humphreys Corporation is 330 feet north of the discovery well of this deep sand, Mills Bennett Production Company's Smith 1, and the production is from the same sand. The Mills Bennett well came in October 9, 1928, for 4500 barrels initial production, 24 gravity oil, from sand at 5231-72 feet. That well is now pumping around 300 barrels per day.

The northeast flank of the Barbers Hill dome is practically virgin territory, although the other sides of the dome have been drilled extensively, with but poor results. There have been relatively few tests, however, on the northeast flank; and those did not go deep enough for the present deep pay. The Humphreys Corporation during the past year and a half has drilled several tests in this part of the field, and most of these tests found commercial production around 4100 feet. On its Kirby "B" lease, just north of the "C" lease on which the present deep producer is located, the Humphreys Corporation has three wells, Kirby B-2, B-3 and B-4, which are still producing; they have a combined daily production of 190 barrels a day, the pay being around 4100 feet deep.

The production from these three wells is from the Miocene; while the production of the new well, Kirby C-1, is from the Heterostegina zone of the Oligocene. It is 430 feet from the Kirby C-1 to the nearest of the three producers on the Kirby "B" lease.

Raccoon Bend Extended to Northeast

Houston.—Humble Oil & Refinipg Company and Valley Oil Corporation have completed Beal 1 at Raccoon Bend, Austin County, extending the field to the northeast. The well came in for 300 barrels initial, flowing through a three-eights-inch choke, and showing 235 pounds pressure. The depth of the hole is 3358 feet, and it includes about 25 feet of the sandy shale pay.

Beal 1 is 700 feet north and 300 feet east of Humble-Valley Bracey 1-A, the nearest producer; and is thus the most northerly producer in the field now.

During the week ending January 5 the average daily production of the Raccoon Bend field was 1500 barrels.

Oil Men January 24-25 San Angelo Prepares for

San Angelo, Texas.—Instructive business sessions, featuring addresses by recognized authorities in the different branches of the petroleum industry, and varied entertainment of a high order are being arranged for the 1929 West Texas Oil Exposition to be held here on Thursday and Friday, January 24 and 25.

All business sessions will be presided over by Levi Smith of Texon, president of the Big Lake Oil Company and one of the pioneer oil developers in West Texas. Among the first to accept invitations to speak have been Dr. Charles N. Gould, director of the Oklahoma Geological Survey at Norman, and F. B. Plummer, of the Texas Bureau of Economic Geology at Austin. Both the West Texas Geological Society, of which V. E. Cottingham is president, and the West Texas Oil Scouts' Association, G. C. Phillips, president, are cooperating with the Board of City Development in staging the exposition. The geologists and scouts hold regular meetings in the quarters of the West Texas Petroleum Club in the St. Angelus Hotel.

Members of the oil division of the Board of City Development which is in charge, is composed of Robert G. Carr of Northrup & Carr, independent operators, chairman; Herbert O'Bannon, cashier of the San Angelo National Bank; W. F. Clark, head of the land department of the Delmar Oil Company; Walter H. Ritterbusch, head of the land department of the Phillips Petroleum Company; Dwight L. Hunter of the Western Oil & Royalty Company; Walter Henshaw of Henshaw Oil Corporation; and V. E. Cottingham of Cottingham & Briscoe, consulting geologists.

Formal opening of the San Angelo airport on the second day with group maneuvers by army planes and air contests for cash prizes exceeding $1700 will be one of the attractions.

There will be golf and trapshooting each afternoon, an athletic show the first night and a dance the second and a barbecue one day at noon at the San Angelo Country Club.

Materials Are Moving for Big Lake Deep Tests

San Angelo, Texas.—Materials are being purchased by the Big Lake Oil Company for the starting of three more tests to the 8500-foot high gravity pay in the Big Lake field on the strength of the steady gain in production registered by the discovery well of this deepest known pay. Texon Oil & Land Company's University 1-B, Group One, which uncovered the deep pay late in November at 8500-8523 feet, gauged 1437 barrels of 50 degree gravity (corrected) oil and more than 12,000,000 cubic feet of sweet gas during the 24 hours ending January 7. This was a gain of 20 barrels over the previous day, and more than 100 barrel gain for the week. The flow of gas from this deep producer reached a new peak of 12,700,000 cubic feet during the 24 hours ending January 1 when the accompanying flow of oil amounted to 1368 barrels.

The Big Lake Oil Company is at work on its first try for deep production, having drilled below the 2600-foot level, and is ordering special rig irons and other equipment to be used in drilling of the three new tests. A conference was held in the East during the past week between Levi Smith, president of the Big Lake Oil Company, and Frank T. Pickrell, vice-president and general manager of the discovery company, regarding the spacing of new locations for the deep drilling. These two concerns are the only producers in the field, and a fourth of the capital stock of the Big Lake Oil company is owned by Texon Oil & Land Company.

W. E. Frick Dies

Pittsburgh, Pa.—W. E. Frick, president of the Frick-Reid Supply Corporation, died at his residence, Sewickley, Pennsylvania, January 8, from pneumonia following influenza. He was 67 years of age. He is survived by his wife and son, R. T. Frick, treasurer of the Frick-Reid Supply Corporation, residing at Sewickley.

Mr. Frick has been in the oil and gas supply business for a great many years, establishing the Frick and Lindsay company in 1892 and with the late Joseph Reid of Oil City, Pennsylvania, established the Frick-Reid Supply Company in 1905. He was active in his business up to the time of his death. In 1928 he perfected a consolidation of these companies into the Frick-Reid Supply Corporation.

He was associated with John A. Roebling's Sons Company, wire rope manufacturers, for a number of years. He was a director of the Bank of Pittsburgh National Association, mine and mill supply business, and other Pittsburgh financial and business interests.

Sugar Land Extended

Houston.—Humble Oil & Refining Company, sole operator in the Sugarland field, Fort Bend County, has extended the productive area there nearly one-half mile to the south through completion of its Dew 1. This well made 768 barrels of pipe line oil during the first 12 hours, flowing through a one-half inch choke.

Depth of the hole is 3591 feet, and 245 feet of six and five-eights-inch, 60 mesh screen is set at that depth.

All of the producers completed prior to bringing in Dew 1 were in a straight line running east and west; with one exception: Brazos Farm 1, about 700 feet south of that east-west line of producers. It came in at 3365 feet making an estimated 50 million feet of gas.

Dew 1 is 2200 feet due south of Camp 1, a recently completed producer, and 2650 feet southeast of Sugarland Industries 1, discovery well at Sugarland.

The average daily production of the Sugarland field during the week ending January 5 was 5,450 barrels.

Prairie Will Increase Its Capacity to Chicago

Independence, Kansas.—W. F. Gates, president of The Prairie Pipe Line Company, has announced that his company will spend close to $8,000,000 in enlarging its pipe line facilities from the Mid-Continent. The company's outlet capacity will be increased by 20,000 barrels daily.

The present main line from the Panova station, near Shawnee, in Pottawatomie County, Oklahoma, to Griffiths, Indiana, east of Chicago, and 739 miles in length, will be enlarged by the construction of 490 miles of eight-inch loops. Construction work is to commence at once under the company's own construction department's direction. The loops will befinished as soon as possible and are expected to be ready for service during the early part of the summer. At Griffiths the crude will be delivered to the Indiana Pipe Line Company.

Prairie Pipe Line Company has a number of other extensions planned for the future; including the 20 miles extension from Towanda to Sedgwick County, Kansas. Rumors are that the company may lay a line from Shawnee to the Trosper Park pool south of Oklahoma City. It is known that the company considered taking the Indian Territory illuminating Oil Company's oil from the discovery well.

Enlargement of Prarie Pipe Line Company's capacity out of the Mid-Continent means that this company probably will continue the ranking transporter of oil from the Mid-Continent.

Tulsa.—Prairie Pipe Line Company will lay a six-inch pipe line from Towanda, Kansas, to the Sedgwick County field, a distance of 20 miles. The Towanda area is connected with the company's main line. This will greatly relieve the threatening confusion of handling oil in the new pool.

Seminole Production

Tulsa.—Greater Seminole crude oil production was 280,501 barrels from 1317 wells during 24 hours ending 7 a. m., January 8. Production was divided by pools as follows:

Little River, 321 wells, 91,839 barrels;

Maud, 27 wells, 25,478 barrels;

Mission, 14 wells, 553 barrels;

Bowlegs, 312 wells, 43,668 barrels;

Earlsboro, 293 wells, 69,574 barrels;

Seminole proper, 282 wells, 40,511 barrels;

Searight, 68 wells, 8,878 barrels.

St. Louis field crude oil production was 130,704 barrels from 290 wells for the same 24 hours.

PERSONAL MENTION-MEN YOU KNOW

Sam Sloan, pioneer oil operator in Mitchell and Howard Counties, West Texas district, was fatally injured January 1 when his aeroplane crashed shortly after taking off at Colorado, Texas. Sloan recently disposed of his oil interests in Howard County, and has been devoting his time to aviation at Midland, Texas.

H. B. Fuqua has succeeded Ben C. Belt as chief geologist for the Gulf Production Company in the North Texas district with headquarters at Fort Worth, following the recent transfer of the latter to the company's district offices at Houston.

A. R. McElreath and **F. W. Suggett,** independent operators, have transferred their headquarters from Wichita Falls to Fort Worth, and are now located at 1408 Fort Worth National Bank building. L. B. Herring, formerly geologist for Marland Oil Company, is now associated with the above partnership, and also located at Fort Worth.

Richard Guiberson, one of the best known oilfield equipment men in the United States and an official of the Guiberson Corporation, will appear in a long recital at the Philharmonic Auditorium in Los Angeles, January 15. Mr. Guiberson will offer an uncommon list of French songs, several of which will be new to Los Angeles. He has been acclaimed in the East as a baritone of unusual ability.

LEONARD E. VAUGHN

H. E. BELL

H. E. Bell, of Abilene, Texas, lawyer, oil man and former conservation agent of the State Railroad Commission, has taken up his duties as the head of personnel for the Humble Oil & Refining Company, and now has his headquarters at Houston.

In his new capacity, Mr. Bell is an intermediary between the employees and the management, and the management of the company hopes through him to maintain a closer contact with the individual employees.

Ray R. Irwin, first vice-president of the White Eagle Oil & Refining Company, has been elected president of the company following the resignation of L. L. Marcell, who became chairman of the board.

Leonard E. Vaughn has been appointed sales manager of The Disc Bit Division of Byron Jackson Pump Company, it was announced by Robert Schurman, vice-president. Harry M. Taylor was named chief assistant to Vaughn. Before the merger of Wilson Oil Tools Corporation with Byron Jackson, Vaughn was in charge of field sales for the first concern. Taylor was connected with the U. S. Tool Company before that firm's merger with Byron Jackson. Both men are widely known and popular with California and Mid-Continent oil men.

Creighton Bates, for 34 years active in the service of the Prairie Oil & Gas Company and its subsidiaries, has retired and will spend his future in Florida with a brother. Executives and friends gave a farewell dinner for Mr. Bates at Independence, Kansas, where he has been located. W. S. Fitzpatrick, chairman of the board of the Prairie Oil & Gas Company acted as toastmaster at the dinner.

J. J. Hasburgh has been appointed manager of sales, reinforcing bar division, Sheffield Steel Corporation, Kansas City, Missouri, and Lester G. Schraub has been appointed manager of sales, wire division, both appointments being effective January 1. Mr. Hasburgh has been with the company for the past nine years. Mr. Schraub was formerly with the Keystone Wire and Nail Company of Peoria, Illinois, for 17 years, the last few years of which he was assistant sales manager.

Eugene Kibele, president of the Kibele Manufacturing Company of San Antonio, died at his home in San Antonio, January 4. He was the developer of the well known pump piston that bears his name as well as many other production and drilling specialties. He has been for many years an active figure in the manufacture of specialties and the activities around the fields of Southwest Texas. The sale of his products will still be handled by the Mission Sales Company of Houston, Texas, and the factory will continue to operate under the management of A. J. Weyel, Jr., secretary and treasurer of the company.

HARRY M. TAYLOR

Sedgwick County Drilling Campaign Increasing Rapidly

(Continued from page 30)

Morgan & Tilly, Fitzgerald 1, nw ne 5-26-1w, rig.

Buvibar-Gypsy-Marland's Wright 2, ne se 12-26-1w, drilling 1880 ft.

Buvibar-Gypsy-Marland's Wright 3, sw ne se 12-26-1w, rig.

Mary Jane Oil Co.'s Fitch 1, nw se sw, 6-26-1s, Kansas city lime 2577-88 ft, shat 3025-80 ft, drilling 3125 ft.

Buvibar-Gypsy-Marland's Wright 2, ne se 12-26-1e, drilling 1440 ft.

Reynolds & Hays, Roll 1, swc ne 7-26-1e, Kansas City lime 2557-92 ft, drilling 2950 ft.

Simmons & Canary, Smith 1, sw se 9-26-1e, shutdown 2502 ft.

T. W. Flake et al's Thompson 1, cel se se se, 18-26-1e, rig.

Shawver et al's Broers 1, ne sw 5-26-2e, shutdown 2150 ft.

Shell Petroleum Corp.'s LaGrisse 1, se ne 15-26-2e, rigg.

Van Zandt & Mason's Fox 1, c nw sw 19-25-1w, show oil 2915 ft.

Connell Oil-T. B. Slick's Cross 1, nec 27-25-1w, Top Kansas City lime 2652 ft, ud 2930 ft.

Morgan et al's Corn 1, sw ne 28-25-1w, drilling 300 ft.

Roy Ramsey et al's Schnessler 1, swc 125-1e, spudding.

H. H. Patton's Ryder 1, nec 22-25-1e, rig.

Barnsdall Corp.'s Samuels 1, ne nw 24-25-1e, shutdown 2440 ft.

Hartman & Skaer, Froman 1, se sw 35-25-1e, drilling 3565 ft in Wilcox sand found at 3503 ft.

O'Hara's Swartz 1, 18-26-1e, nec, cellar.

Kansas Oil Co.'s Shelly 1, nw ne se 32-29-2e, location.

T. C. Johnson, Reeves 1, se sw se 19-28-1e, rig.

LaRobb-T. B. Slick et al's Smyser 2, sec sw se 36-25-1e, rig on ground.

S. J. Houston's Benningfield 1, ne se nw sw 6-26-1e, location.

Derby Oil Co.'s Gorham 1, sec ne ne nw 6-26-1e, location.

Derby Oil Co.'s Bowling 1, swc nw ne sw 6-26-1e, location.

Vickers Petroleum Co.'s Nissen 1, swc ne sw 6-26-1e, location.

Vickers Petroleum Co.'s Nissen 2, nwc sw ne sw 6-26-1e, location.

Sutter-Pyle's Caldwell 1, nwc se sw 6-26-1e, location.

Marland Production Co.'s Westerfield 1, nwc se sw 16-25-1e, cellar.

Marland Production Co.'s Goodrich 2, nwc ne sw 16-25-1e, location.

Shawver-Dickey-Patton's Valley Center 1, nwc sw 31-25-1e, location.

Derby Oil Co.'s Valley Center 1, nwc sw sw 35-21-1e, location.

Davis-Skelly's Wilson 1, nec nw ne 1-26-1w, location.

Louis Ravioz, director of the Warner-Quinlan Company, New York, visited the Dallas office of the Warner-Quinlan Company of Texas, a subsidiary, late last week in connection with a tour of the properties of the company.

Committee of Nine Named by Mid-Continent Association

TULSA.—Wm. N. Davis, president of the General Mid-Continent Oil & Gas Association, announces the following Committee of Nine appointed in accordance with the resolution of the directors of the General Mid-Continent Oil & Gas Association, adopted at their meeting on December 19. There has been some delay in the selection of this committee because of the realization of the great importance of this work and the desire to be assured that each member of the committee would give the time and the interest essential to its efficient action. This necessitated communication with the leaders of the industry and the prospective members in each of the various districts. However, the work has been progressing and numerous conferences have been held in the meantime.

Committee of Nine

W. C. Franklin, Tidal Oil Company, Tulsa, Chairman;

W. G. Skelly, Skelly Oil Company, Tulsa;

W. S. Fitzpatrick, Prairie Oil & Gas Company, Independence;

A. M. Landon, Independent Producer, Independence;

H. V. Foster, Indian Territory Illuminating Oil Company, Bartlesville;

W. S. Farish, Humble Oil & Refining Company, Houston;

W. H. Francis, Magnolia Petroleum Company, Dallas;

J. S. Bridwell, Independent Producer, Wichita Falls, Texas;

M. J. Grogan, Louisiana Oil Refining Corporation, Shreveport;

Wm. N. Davis, (ex-officio), Phillips Petroleum Company, Bartlesville.

The following is copy of the resolution adopted, which outlines the duties of the new committee:

Resolution

"Whereas, the excessive and destructive competition attending each step in the production of petroleum, including leasing, prospecting, drilling and producing, is one of the principal sources of the economic troubles of the oil industry, and is also the source of great economic and, at times, physical, waste of one of our country's most important and irreplacable natural resources, and

"Whereas, research and experience in the industry have shown that these evils can be largely eliminated by lawful methods of cooperation, outstanding among which is the practice of pooling acreage for prospecting and development purposes, and

"Whereas, such cooperative practices have been recommended by the Federal Oil Conservation Board, the American Petroleum Institute, and the Committee of Nine—composed equally of representatives of the federal government, the American Bar Association and the oil industry.

"Therefore, it is resolved by this Board of Directors that all producers of oil be and they are hereby urged to adopt a general policy of restricting unnecessary drilling, of refusing to buy spreads of undeveloped acreage in or about new drilling projects, or to contribute to or participate in the opening of new areas where the acreage has not been pooled or utilized or a cooperative method of orderly development arranged; and

"It is further resolved that the president is authorized and directed to appoint a representative committee of nine to immediately proceed to appoint committees from each Division to study and devise the most effective method or plan of operation by which the Association may assist in promoting constructive cooperative practices. Such committee is requested to also study the suggestions above made and to be ready to report its plan to this Board at the next meeting thereof to be called by the President early in January; and

"It is further resolved that the standing legal committees of each Division be requested to formulate and submit to the next meeting of this Board a lease provision authorizing the lessee to include the royalty and working interests in pooling agreements thereafter to be made, permitting rational development of the area and preserving to the royalty interest its due proportion of the interest assigned to the particular tract in the pooled area; and

"It is further resolved that the royalty owners be invited to participate in the conservation work herein outlined to the end that the whole industry may cooperate to improve the producing conditions, reduce waste and thus confer inestimable benefits upon all branches of the industry as well as the public."

Los Angeles—Associated Oil Company has started another well in the Potrero field, the exact location being 1470 feet north and 200 feet west of the center of Section 34-2-14. In locating a well at this point, the company is following the probable northwest trend, which has prevailed in all fields lying along the Beverly Hills-Newport fault. The company's Pacific-Southwest 1 failed to respond to swabbing at 5400 feet and is being cleaned out for another test. Voorhes 1 has shown no life and apparently is outside the producing limits of the field.

Buckbee Again Favored Objective at Santa Fe Springs

Operations shifting toward southeast sector follows failure to find Buckbee in northwest; Santa Fe Springs production showing more gains

By BRAD MILLS
Staff Representative

LOS ANGELES—Climbing steadily to a new record on this move and promising still greater gains, the Santa Fe Springs field is showing no inclination toward even a temporary slump. Aided by a 9000-barrel completion, the largest yet finished, and five smaller wells, production jumped to 131,000 barrels, of which more than 100,000 barrels is coming from the Buckbee and intermediate zones.

Another reversal of form which may have a far reaching effect on both peak production and the decline from the peak was noted in the improvement shown by the Buckbee zone and disappointing developments in the Intermediate zone. Until recently, the reverse had been true, with the Intermediate zone promising to yield clean oil, at least near the center of the field. The spotted appearance of both zones still is apparent, but there seems no immediate danger of a flood of water from the bottom of either sand. Water has presented a series of perplexing problems but clean completions directly offsetting these questionable producers have shown that the sand alone may have not been at fault.

A shifting of operations toward the southeast sector is in evidence, nearly all of the new locations during the past two weeks having been made in this part of the field. Failure to find the Buckbee zone in the northwest area has been the direct cause of this switch, while the completion of three very large wells southeast of the inside contour lines has been a contributing reason.

It is especially interesting to note that only one of the several wells completed in the intermediate zone has been entirely clean. That was George F. Getty's Nordstrum 17, which came in under the most adverse conditions. This well is still producing 6000 barrels of clean oil from a few hundred feet of open hole, the cut being almost too small to detect. Since the well was brought under control after burning for seven weeks, it has produced more than a half million barrels of oil. The cut in the other Intermediate zone wells ranges from two per cent. to 35 per cent. This formation, when judged solely from the performance of Nordstrum 17, promised to be the real sensation. Nearly all wells have included several hundred feet of the zone and thin streaks of water sand probably have been included unintentionally. There is only a thin break between the sand and the Buckbee zone below. Even with its tendencies toward water, the zone is far from a failure and will be a material factor in the deep development.

Outpost Wells

Both Richfield Oil Company and Associated Oil Company are drilling ahead in their outpost wells along the northwest flank of the field, despite the fact that the Buckbee zone has been missed. The former's Elliott 2 has reached 6375 feet, while the latter's Clark is much worse off, having passed 6700 feet with nothing more than a streak of Buckbee shale as a reminder that the Buckbee sand will not extend as far as the Meyer zone. These wells are considered important tests and have saved at least one company the trouble of testing its lease in this sector. Clark 2 is by far the deepest well ever drilled in this part of the field and one of the deepest in the district.

Discovery of the Buckbee zone in the Associated Oil Company's Delugge 7, the most northerly deep test in the field, is regarded as an important development. This well is located almost as far out as the edge of the Meyer zone and gives the northern flank a better appearance. The Buckbee zone was picked up at 5891 feet, or about 300 feet deeper than it is found near the apex.

Standard Oil Company has cut more than 30 feet of oil sand in Johnson 6, the most southerly deep test, and seems to have formation enough to make a commercial producer. This well is located near the line which is expected to mark the limits of the Buckbee zone.

Universal Consolidated Oil Company has been unable to solve the water problem in O'Connell 3, which was killed in a few hours by encroaching water, and has recemented in the Buckbee shale. This well stopped flowing oil soon after the completion of O'Connell 2, adding some weight to the theory that the latter was responsible for the trouble. O'Connell 2 is showing a cut of 15 per cent. but despite this handicap, is flowing 5000 barrels of oil. The water seems to be coming in around the shoe. The water string is anchored in the shale bed above the Buckbee sand. O'Connell 3 was producing more than 5000 barrels of clean oil when the water broke in and stopped the flow.

After gradually increasing its cut from one per cent. to 50 per cent., The Texas Company's Matern 2-7 has died outright. This well came in flowing clean oil and did not show a cut for several weeks. The company is convinced that the water was coming from the bottom of the hole and will plug back after cleaning out. Matern 2-7 was the second Buckbee completion and came in with an initial production of 4500 barrels.

Northwest Well Has Sand

Discovery of more than 60 feet of oil sand in Standard Oil Company's Jordan 7, in the extreme northwest part of the field, was a surprise, in view of the failure in other wells nearby, and gives the well a chance for commercial production at 5850 feet. A string of casing has been cemented, but only 25 feet of the sand will be tested at this time.

Adding to its recent success in the field, Richfield Oil Company again jumped to the front with the completion of Howard 2 as an 8500-barrel producer from 5768 feet. This is the largest well yet completed in either the Buckbee or Intermediate zone and is flowing clean oil. The Buckbee zone stepped to the fore because of the remarkable showing of Howard 2 and served notice that water should not be expected if too much of the zone is not included. Only last week the company completed Howard 1 as a 6100-barrel well. These wells give the the southeast part of the field a still further advantage, although Richfield Oil Company's success may not be shared with all operators in this immediate section.

Union Oil Company continued its success in the Intermediate zone, with the completion of Alexander 12, which came in with an initial production of 5700 barrels from 5438 feet. The oil was 35.2 gravity and showed a cut of only 1.3 per cent. This was the nearest approach to a clean well that has been completed in the Intermediate zone since the discovery well was brought under control.

Superior Oil Company's Wardman 5 fell considerably short of expectations in the Intermediate zone, coming in with an initial production of 3500 barrels. With a 25 per cent. cut, the net production is much lower. This well was completed at only 5100 feet, after every precaution was taken to eliminate the possibility of bottom water.

Wilshire Annex Oil Company, subsidiary of the Wilshire Oil Company, succeeded in completing Koontz 3 in the Buckbee zone. The well was drilled to 5775 feet and flowed 4200 barrels on the initial test.

The Texas Company made its debut in the Intermediate zone, with the completion of Foix 5 as a 2200-barrel producer from 5403 feet. The oil was 35.2 gravity and showed a cut of two per cent.

St. Helens Petroleum Company obtained its first production by completing Hill

1, which was a 1700-barrel well in the Intermediate zone at 5037 feet. The oil showed a cut of 42 per cent. and after failing to clean up, the well was killed and started for the Buckbee zone.

Gas production already has passed the actual field requirements and a large quantity is being blown into the air. Field plants are operating at capacity but several companies are unable to dispose of the surplus gas.

The latest field report shows 11 wells in, five cemented over and five ready for completion in the Intermediate zone; 16 wells coring the Buckbee shale, 18 cemented over and two ready to complete in the Buckbee zone. Active drilling wells total 220, with more than 60 due for completion during the next 30 days.

Second Rincon Deep Test Nears Objective

Ventura, Calif.—A showdown in the deep sand in the Rincon field is expected soon, as the result of a second well now approaching the formation. Richfield Oil Company has passed 6400 feet in Hobson Fee 2, and should soon know whether the inability to shut off the water in Miley-Hobson 1 was due to moisture in the sand or mechanical trouble. After a series of mishaps and two unsuccessful tests, Miley-Hobson 1 has refused to become a commercial oil well under any circumstances. The well flowed water and a smaller amount of oil and showed a good gas pressure for a time but failed to impress the company at any time. The oil sand was found around 6500 feet and if the formation is to become a factor in Rincon it must show its wares in Hobson Fee 1, the second deep well. A cement plug has been set at 6500 feet in Miley-Hobson 1, the next test to be conducted above this point. The hole was originally drilled to 6531 feet, tested and plugged back to 6520 feet for the second unsuccessful test. If the third production test reveals water, there is every evidence that gray or water sand is closely laminated with the oil sand and shale.

Los Angeles.—The Supreme Court of California has ruled that the leasing of coastal tidelands for the recovery of oil is constitutional, as provided in the 1921 and 1923 acts of the legislature, and that companies planning to develop their holdings along such lands were within their rights. The decision was the direct result of the stand taken by the attorney general, who was of the opinion that the legislature had exceeded its rights in passing such laws, and that the beaches would lose their beauty by unsightly derricks. Companies and individuals holding leases on these permits sought to have the decision made so that they could get permits to drill their holdings. The supreme court added clauses which may lead to further litigation, but principally upheld the laws which permit the leasing of tidelands not within two miles of the coroporate limits of cities.

Outpost Tests at Elwood Show Unfavorably

Santa Barbara, Calif.—It begins to look as if the Rio Grande Oil Company and the Barnsdall Oil Company exclusively control the new Elwood field, judging from the lack of showings in the several outpost wells now being drilled by other companies. The Bankline Oil Company has passed 4600 feet in A. D. 1, north of the discovery well, but the oil sand which was expected above 4300 feet has not been found. This well is slightly farther out than Elwood Community 1, which has been used as an edge test by the discoverers and which has also failed to find a commercial sand. Other wells are drilling below 4000 feet, with few showing behind to encourage the operators.

There is every indication that a large part of the structure lies under the Pacific Ocean, since the discovery well is only a stone's throw from the water. This well was located at a point which seemed to be the center of the structure, and if such proves to be the case, there is a possibility that fully half of the field will never be drilled. There is litte likelihood that the field will parallel the coast.

The Rio Grande Oil Company and The Barnsdall Oil Company, joint operators and discoverers of the field, are ready to complete Doty 2, which will be the fifth producer. The well was drilled to 3311 feet and promises to make a good producer. These two companies are producing 15,000 barrels from only four wells, perhaps the record achievement in any new field discovered in recent years. The oil is high in gravity and is finding a ready market at regular posted prices. Transportation facilities are almost ideal, the field being located on a railroad, a highway and only a few hundred yards from navigable water.

Transfer of Section 36 Is Held Invalid

Washington, D. C.—Throwing out another of the contracts signed by former Secretary of the Interior Albert B. Fall, the United States Supreme Court on January 2 held invalid the transfer to the Standard Oil Company of Section 36 of the Elk Hills District of California.

The section of land involved in the suit was one of those which, if not mineral in character or otherwise disposed of, was granted by Congress to the State of California in 1853 for the aid of public schools. The question involved in the case was whether or not the mineral character of the land had been determined by the Department of Interior on January 26, 1903, the date on which the survey of the section was approved.

It was the contention of the oil company that former Secretary Fall by his action in 1921 had determined that the mineral character of the land was not known at that time and that, consequently, the land had passed from the jurisdiction of the department notwithstanding the fact that in 1925 Secretary of the Interior Work vacated Fall's order and directed the department to proceed with a hearing on a charge that the land was known to be mineral in character on the earlier date. The oil company claimed title to part of the land and an interest in the rest of it on the basis of patents issued by the State of California to private individuals in 1910.

California Record Well Holding Up Flow

Coalinga, Calif.—Producing 3800 barrels of 60 gravity oil after a 60-day test, Milham Exploration Company's Elliott 1 ranks as one of the greatest wells ever completed in California, and certainly a record breaker in the matter of gravity. This well, which opened up the field, is flowing from 6131 feet and is producing 40 million cubic feet of gas in addition to the light oil. About 15 locations have been made since the field was discovered and at least 25 wells will be started within 60 days. The structure apparently extends over an area several times as great as that commonly included in California fields.

Los Angeles.—Advices from Washington are to the effect that the government is trying to ascertain the exact status of the Shell Company of California before granting the company permits in California. Recently Holland changed its regulations to permit working agreements between Dutch and American companies, but the United States government wants to make sure that the Shell Company is a Dutch company and not British controlled. The British government has frowned upon the entry of American interests in certain parts of its vast domain and Washington wants to be certain of the control of the Shell Company of California before granting permits in its name, according to reliable reports from the capital.

Taft, Calif.—The suspension and abandonment of several wells in the Midway district has been partially offset by the starting of two wells for the deep sand discovered a year ago on Section 8-32-23. The Chanslor-Canfield Midway Oil Company has started a well on Section 7, while the Republic Petroleum Corporation has located another well on Section 8. The deep sand in this part of the field is looked upon with favor, having already yielded three good wells.

Bakersfield, Calif.—Leasing over a wide area with a radius of several miles of the Mt. Poso field has shown a sharp increase, due to the recent discovery of another new field north of Mt. Poso. Of the four new fields opened up in the district during the past 18 months, all have been ushered in with shallow wells. These shallow sands make wildcatting attractive, despite the fact that only heavy oil is found in the area.

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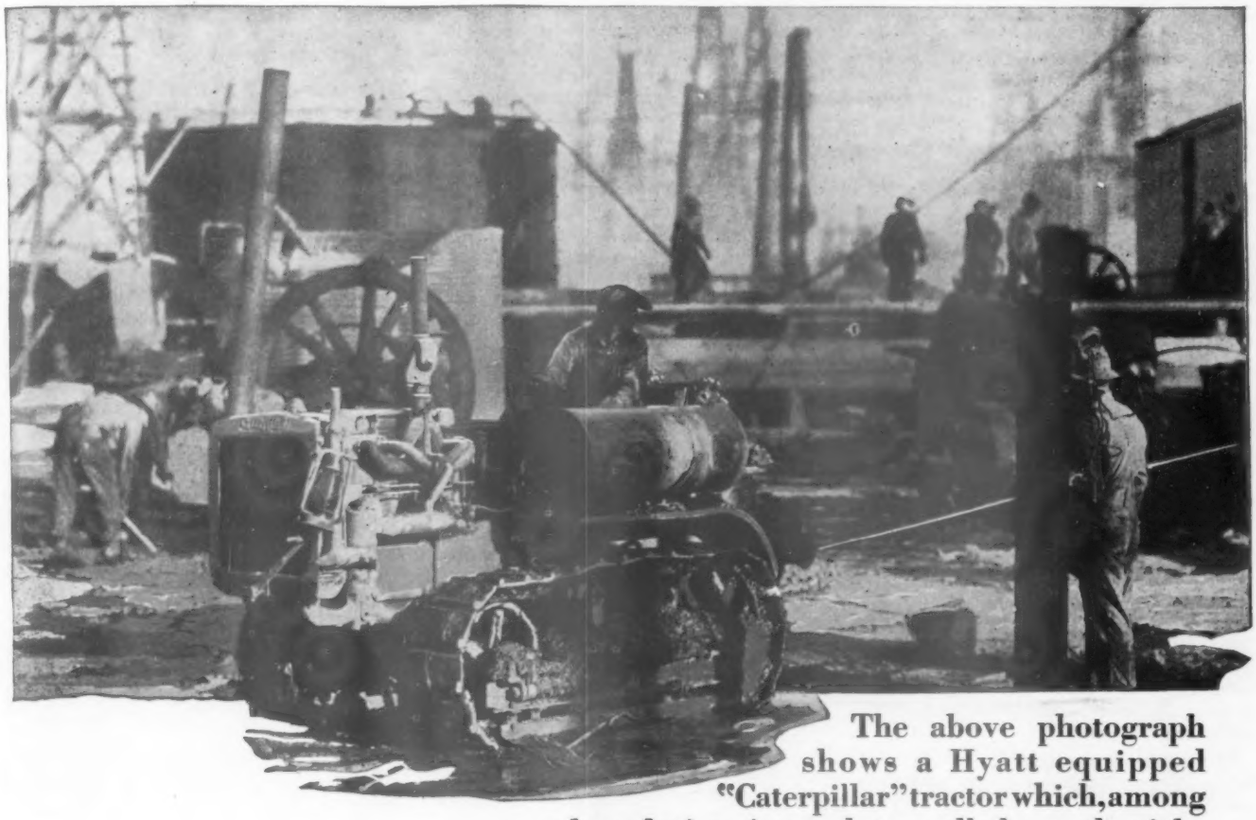

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Drilling in Louisiana Takes Big Slump During Year

New year starts with little activity in North Louisiana-Arkansas area; only two new tests announced in Arkansas

SHREVEPORT.—Drilling activity in Louisiana during 1928 showed a considerable decline from the level of 1927, as revealed by the number of drilling permits issued by the minerals division of the state conservation commission during the last 12 months. Six hundred and seventy-four permits were issued during 1928 as compared to 806 in 1927. Imposition of an increased severance tax by the present state administration is given as one of the causes of the decline.

The new year in North Louisiana, South Arkansas and East Texas started off without any developments of importance. Completion of a good well in the main pool of Champagnolle, Union County, Arkansas, following the completion of several large gassers recently and the tapping of what is believed to be the Graves sand, the most prolific horizon in Smackover, and heretofore untouched in Champagnolle, has led to the opinion that there will be a revival of drilling in the older part of the district, which had shown a slump after the center of operations had shifted to the northeast extension of the field in Sections 6- and 7-17-13.

The best well in some time recorded in the older part of the field was completed during the last week in H. L. Hunt's Gregory 3, in Section 10-17-14, which is flowing 211 barrels of oil by heads from 3259 feet.

Champagnolle continues to be the most active district in the area, the new year opening with 29 rigs running in that district, more than half of them in the older part of the field.

Pine Island, Caddo Parish, and the Bethany gas field in Panola County, Texas, are next in number of operations under way, with 18 in each of these two districts. Panola County has taken on renewed life, following the recent discovery of a fourth producing sand at 2600-2700 feet.

The Gregory well was one of four producers completed during the week in the territory, all of the wells being in Arkansas. In the northeast portion of Champagnolle the Lion Oil and Refining Company added C. B. Nash 2, in Section 6-17-13, as a 100-barrel flowing well at 3051 feet. In the semi-wildcat Calhoun area of Ouachita County the Little Fay Oil Company added a 30-barrel pumper in H. Primm 3, in Section 24-15-16, at 2084 feet, while the fourth producer of the week was Humble Oil & Refining Company's Groves D-2, in Section 6-14-20, which is pumping 25 barrels from 1140 feet.

Louisiana did not record a single oil producer during the week but got three gas wells, the same number as completed during the week in the East Texas territory.

On the eastern edge of the Shongaloo gas area in Webster Parish where there has been a flurry of drilling recently, Magnolia Petroleum Company added H. H. Branton 1, in Section 5-22-9 as a 5,499,000-foot gasser at 2706 feet. A small gasser that gauged 2,757,000 cubic feet was added by the West Virginia Oil and Gas Company in Fee 6, in Section 6-18-4e in the Ouachita Parish part of the Monroe gas area. The third Louisiana gas well was Ouachita Natural Gas Company's Pardue 4 in Section 5-15-6e, Richland Parish.

The Panola County gas area of East Texas' three gassers were: Eureka National Gas Company's Gulley 1, in the James Matthews Survey, which gauged 4,000,000 feet at 950 feet in depth; Magnolia Petroleum Company's L. Fletcher 2, B. C. Jordan Survey, which gauged 47,556,000 cubic feet at 2560 feet; and The Texas Company's T. C. Adams A-7, in the S. B. Lacky Survey, that is making 2,710,000 feet from 958 feet.

Three important wildcats comprised the week's list of failures in this area. Doern and Associates' Bolinger 1, in Section 9-22-11, Bossier Parish, after being shut down was finally abandoned as a salt water hole at 4317 feet.

De Soto Failure

R. O. Roy's second test of what had been thought was a new gas field in De Soto Parish, was also a salt water hole, Whittaker 1, in Section 4-13-13 being abandoned at 2950 feet. Roy's first well in that area was completed last August and was estimated at from 20,000,000 to 40,000,000 feet daily. Magnolia Petroleum Company subsequently laid a gathering line to the gasser from its compressor station at Latex on the Louisiana-Texas line. Arkansas' contribution to the failures was Tate and Morefield's W. W. Smith 1, in Section 6-18-13, Union County, dry at 3302 feet.

While Arkansas apparently is still suffering from a post-holiday slump in new drilling having only two new locations announced for the week, nine new location in the other two states kept the level of new work on approximately the same basis that has been maintained for the last three or four months.

Both of the Arkansas locations were in Union County, one being a wildcat and the other a test for the southeast part of Champagnolle. The former test is Frazier and Associates' Laney 1, in NW SE Section 30-19-16 and the latter is Magnolia Petroleum Company's W. K. Gregory 3, in NW SE Section 15-17-14. Announcement was also made during the week that the Phillips Petroleum Company is rigging up to deepen B. Joyce 20, in Section 33-15-15, in the heart of the Smackover field.

Immediately south of the Spring Hill gas field in Webster Parish where two producers have recently been completed around 2700 feet, Magnolia Petroleum Company has announced location and is rigging up to drill Denman 1, in Section 1-22-11. Bayou State Oil Corporation has derrick up for Land 6 in Section 22-22-15, Vivian district, Caddo Parish. On the Caddo Parish side of the Waskom gas field Lorraine Syndicate has made location for J. M. Bryson B-1, in Section 18-17-16. In Morehouse Parish Southern Carbon Company has just spudded Fee 51, in Section 15-20-4e, and in the Ouachita Parish side of Monroe, Palmer Corporation has derrick up for Fee 5, in Section 24-19-4e and Pipe and Mack are rigging up for McGee 1, in Section 10-18-4e.

Hartanzo Oil Company is rigging up for its third test on its Urania lease in Section 7-10-2e, LaSalle Parish.

In Panola County, the Eureka Natural Gas Company is rigging up Gulley 2, in the James Matthews Survey. The Nemours Corporation has spudded in Lawless 1, in the L. Chisam Survey of the same county.

Interest continues in Joe Hurley's Arkansas Land & Timber 1 in Section 29-16-12, a wildcat in Calhoun County, Arkansas, where a string of 6⅝-inch casing was set at 2303 to 2314 feet, is waiting to harden. McDonald Brothers, who lost the first hole at Wilson 1 in Section 25-15-18, Union County, between production in the Louann section of Smackover and the Stephens field, after the well had shown promise of being a producer, have encountered trouble in the second hole drilled 40 feet north of the first test. Latest reports are that after a testing tool was run from 2788 to 2806 feet, the tool stuck as did the drill stem and efforts are now being made to work over the drill stem with 6⅝-inch casing.

In Louisiana the wildcats holding the most momentary interest are Dixie Oil Company's Gilbert 1, in Section 27-21-5w which is shut down waiting orders at 4517 feet, and Smitherman & McDonald's Miller 1, a deep test in Section 17-23-8 in the old Haynesville field, where 6⅝-inch casing was set at 4190 feet. Dixie Oil Company's Robertshaw 92, in Section 13-21-15, Caddo Parish, Pine Island, which showed oil and gas at 6099 feet is still shut down waiting orders.

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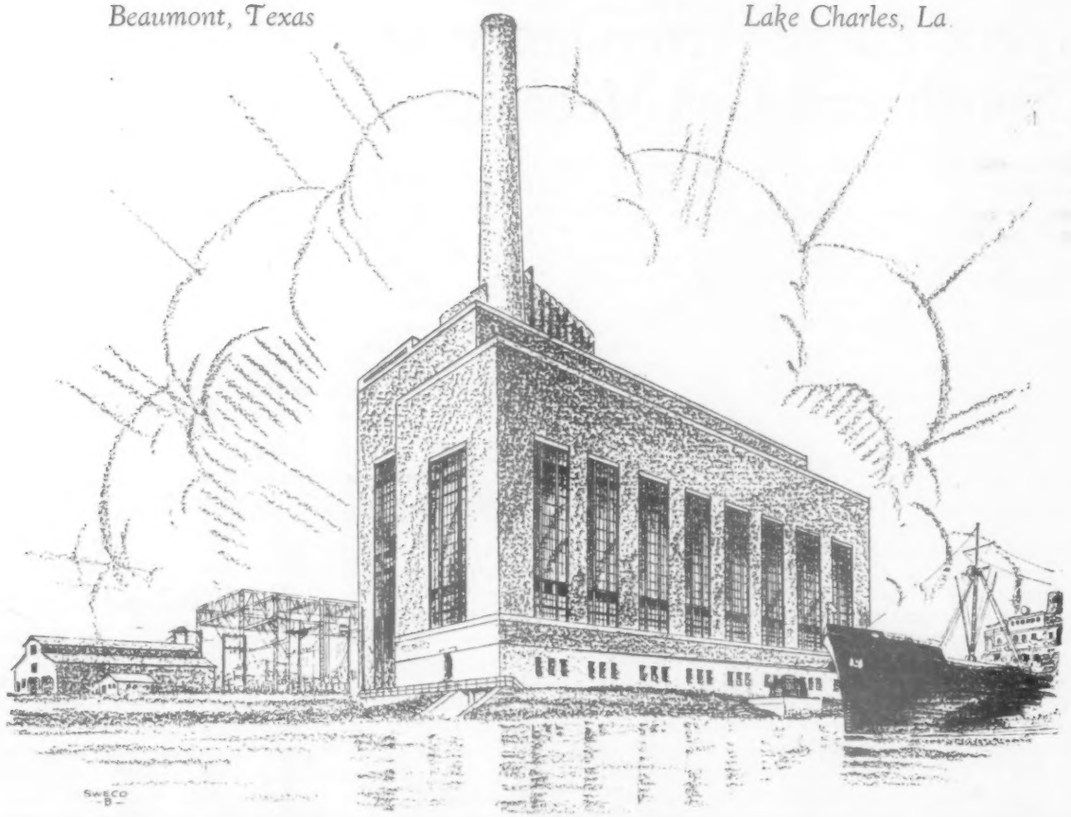

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News of the Natural Gas Industry

Serious Gas Wastage In California

Los Angeles.—With more than 75 million cubic feet of gas going to waste daily in the Santa Fe Springs field, wastage of this important commodity presents a serious problem in California. A surplus of gas has existed at Ventura and Long Beach for some time but the reduction of this excess has more than been offset by the gain at Santa Fe Springs. Strenuous measures for the conservation of gas are under consideration, but little action has been taken for several months. The state is interested in the reduction of this wastage and recently issued a veiled warning that something should be done by the operators themselves.

Kansas City Gas Pipe Line Completed

Bartlesville, Okla.—According to an announcement made by the Cities Service Gas Company, a third 16-inch line between Ottawa, Kansas, and Kansas City, Missouri, has recently been completed. This completes the entire pipe line project begun in 1927, which resulted in connecting Western Missouri and Northern Kansas directly with that company's great gas reserves in Gray and Carson Counties, Texas. The entire pipe line, including both gathering and main lines, is 450 miles in length and has a daily delivery capacity of about 100,000,000 cubic feet. This delivery involves the operation of six compressor stations with a capacity of 27,000 horsepower. Cities Service Gas Company has an open flow in Texas of more than 750,000,000 cubic feet daily. This gas is now being produced from 28 wells located in a gas reserve comprising about 150,000 acres.

New Carbon Black Plant In Texas Panhandle

Amarillo, Texas.—A 50,000,000 foot capacity carbon black plant will be constructed by the Western Carbon Company, subsidiary of the Columbian Carbon Company, in Hutchinson County, Texas, at an early date. Residue gas from the natural gasoline plant of the Phillips Petroleum Company will furnish the gas supply.

Ready to Start Work on Line to Salt Lake

Casper, Wyoming.—It has been announced here that actual construction on the Wyoming-Utah gas line will start on February 1. All of the pipe and much of the other necessary material has been ordered; some of it is already shipped. This line is to be 287 miles in length ditching machines are to start at Salt Lake City, at Coalville, at Ogden, and at Hiawatha dome, and possibly at two or more stations on the line. The work on extending and repairing the distributing systems of the Insull gas companies in Ogden and Salt Lake is to be started as soon as possible.

Montana Line to Serve 26 Communities

Great Falls, Mont.—The Montana-Dakota Gas Company of Minneapolis will extend its high line in northeastern Montana to serve 26 Montana communities along the Great Northern railroad. The new line will be 200 miles long. A contract has been given to A. H. Perkins for an intensive drilling campaign in the Kremlin and Cabin Creek areas, the work to be started immediately.

Towns along the route of the proposed line are Chester, Bison, Joplin, Inverness, Rudyard, Hingham, Dilford, Kremlin, Fresno, Havre, Lohman, Chinook, Zurich, Harlem, Savoy, Coburg, Dodson, Wagner, Malta, Bowdoin, Saco, Beaverton, Hinsdale, Tampico, and Glasgow. The line will be built in 1929 and completed in 1930, according to the present plan. According to report the company plans to carry its line from the Cabin Creek field to the Black Hills and on into the Dakotas, and it is thought that eventually it may go into the Twin Cities. A large power plant is being completed at Baker, where electric energy will be generated for use on the company high lines in Montana and North Dakota, the power to be generated through the use of natural gas as a fuel. A pipe line was run into Baker during the fall, and further development in the section is expected during 1929.

W. E. Lockhart Goes With Inland Gas Corp.

Denver. — W. E. Lockhart, associated for the last ten years with the Frank E. Kistler interests of Denver, has been elected president and general manager of Inland Gas Corporation, with headquarters at Ashland, Kentucky. Inland Gas Corporation delivers gas to industrial consumers in Kentucky, West Virginia and Ohio, and direct to the consumer through its subsidiary, Inland Gas Distributing Company, Kentucky Fuel Company and the Buckeye Fuel Company.

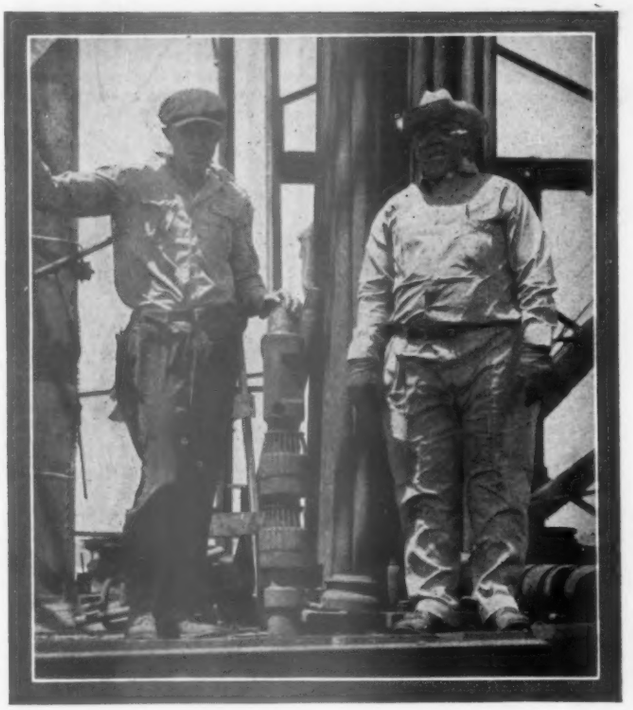
Expect Large Attendance at Southwest Gas Meeting

DALLAS, Texas.—Because of the development of the natural gas business in the states of Oklahoma, Arkansas, Texas, Louisiana and New Mexico, and the important problems that confront the industry it is expected that the attendance of Southwest gas men at the Shreveport meeting, January 14 and 15, will be unusually large. According to W. C. Grant, secretary of the Southwest Division of the Natural Gas Department, American Gas Association, this meeting will be outstanding in interest and he urges all Southwest gas men to attend, if at all possible. According to the final program, just issued, there will be a number of important papers and addresses that are particularly timely. Among the more important of these are, "The Development of a Natural Gas Industry," by R. J. Daugherty, Empire Companies, Bartlesville, Oklahoma; "Review of Open Flow by Pressure Methods," by H. C. Rawlins, United States Bureau of Mines, Bartlesville, Oklahoma; "Proper Casing and Tubing of Wells," by H. C. Otis, Arkansas Natural Gas Corporation, Shreveport; "Economic Problems of High Pressure Gas Transmission," by P. McDonald Biddison, Monroe, Louisiana.

Major Alexander Forward, managing director of the American Gas Association, New York, will address the meeting on "A Word From The American Gas Association." There will also be a joint meeting of the Louisiana section of the American Society of Mechanical Engineers and the Southewst Division of the Natural Gas Department of the American Gas Association, which will be presided over by Roy McGrew, of the Standard Pipe Line Company. Another feature of the meeting will be the presentation of a moving picture showing the process of manufacturing seamless line pipe, through the courtesy of the National Tube Company.

Henry C. Morris, president of the Dallas Gas Company, will be general chairman of the meeting. The committee on arrangements includes N. C. McGowen, B. M. Mowery and D. R. McWilliams, all of Shreveport. The committee on papers includes Elmer F. Schmidt, Dallas; Edward F. McKay, Oklahoma City; and William C. Grant, Dallas. A special entertainment feature, of which Shreveport gas companies are to be hosts, is a barbecue at the State fair grounds, on Monday evening, January 14. This will be followed by a program of boxing and wrestling in the fair grounds coliseum.

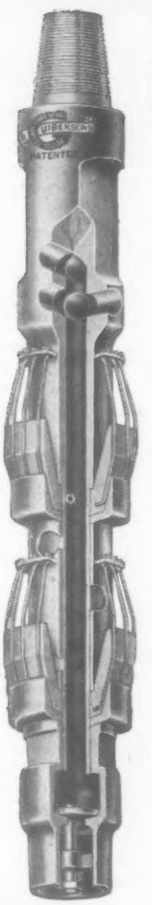
When you run a GUIBERSON SWAB *you get the fluid!*



The GUIBERSON Swab shown above was dropped 300 feet without being hurt a bit. The men are A. Vannoy, tool dresser and C. E. Rickets, driller, Bowlegs, Okla.

In the GUIBERSON Swab, fluid pressure works *with* the rubbers, not against them. Instead of forcing the rubbers away from the casing walls, the fluid pressure holds the rims of these flexible cups closely against the casing—thus preventing leakage, even when passing obstructions, and raising a full load on every trip. When you run a GUIBERSON SWAB you get the fluid—not merely exercise.

You can easily see how the GUIBERSON flexible cups also reduce friction and casing wear, eliminate sticking, and permit the swab to run in faster because the fluid can by-pass the cups as well as passing through the valve. These rubbers are of a remarkably durable composition, and the imbedded guide wires steer them safely past projections and casing joints.



Cut-out view of Type "E" Production Swab. *Fully Patented*

"Better Be Safe Than Sorry"

The Guiberson Corporation
Box 1106, Dallas, Texas
California Branch: 1506 Santa Fe Ave., Los Angeles
402 W. First St. TULSA — 321 Osage St. PONCA CITY — 506 Trust Bldg., NEWARK, O.

GUIBERSON
BETTER BE SAFE THAN SORRY

Say you saw it in The OIL WEEKLY

United States Daily Average Production

Figures below are taken from the complete revised estimates of the AMERICAN PETROLEUM INSTITUTE except for the current week, which are advance estimates issued by the A. P. I. and are subject to revision:

1927	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Arkansas	Eastern States	Rocky Mountain	California	United States Daily Ave.	United States Total
September	797,450	105,200	493,750	142,900	53,450	101,350	110,800	74,500	637,250	2,516,650	75,498,900
October	782,300	105,100	497,900	138,400	51,300	100,450	113,600	73,250	629,000	2,491,300	77,230,000
November	766,900	106,650	501,750	138,100	49,400	97,850	114,900	75,050	623,850	2,474,450	74,233,500
December	720,700	106,150	531,650	138,500	47,200	94,950	111,250	77,150	624,600	2,452,150	76,017,050
1928											
January	675,450	108,300	523,300	125,450	45,250	90,050	109,600	77,000	617,100	2,371,500	73,516,500
February	664,450	110,550	538,750	115,800	45,300	88,250	104,850	75,550	614,750	2,358,250	68,388,850
March	646,850	112,250	575,850	119,900	44,400	85,600	102,150	78,700	617,450	2,383,150	73,877,650
April	620,450	112,150	617,850	118,850	46,900	83,450	107,000	78,500	613,550	2,398,700	71,961,100
May	610,100	108,750	561,450	129,850	43,600	91,250	112,100	82,200	630,900	2,370,200	73,476,300
June	594,850	105,200	554,400	135,400	42,350	102,850	109,300	82,400	643,400	2,370,150	71,104,500
July	587,150	102,750	597,250	133,650	42,150	90,700	113,400	80,400	644,700	2,392,150	74,156,600
August	656,350	102,200	604,000	130,200	40,200	87,500	113,300	77,700	634,150	2,445,600	75,534,600
September	724,850	99,750	604,150	129,500	39,050	84,700	112,550	78,850	631,650	2,505,050	75,151,500
October	741,350	97,900	598,550	129,950	38,800	83,550	114,000	83,300	624,450	2,511,850	77,867,800
November	715,750	96,600	586,350	135,100	38,600	83,000	109,700	81,150	653,050	2,499,300	74,978,300
Dec. 1	708,600	97,250	582,950	132,150	38,200	82,100	110,000	78,100	676,800	2,506,150	17,543,050
Dec. 8	705,300	97,950	598,750	132,400	37,750	83,950	112,000	73,150	679,600	2,520,850	17,645,950
Dec. 15	707,050	96,600	601,650	135,400	37,500	81,550	113,500	75,950	697,600	2,546,800	17,827,600
Dec. 22	704,650	96,000	607,050	740,650	37,000	80,000	115,000	74,100	703,600	2,550,750	17,855,250
Dec. 29	723,150	98,300	607,300	783,100	37,050	80,050	114,000	73,550	708,900	2,581,050	18,067,350
Jan. 5	719,750	97,100	615,250	788,050	36,400	80,200	113,250	78,100	714,600	2,591,050	18,137,350
Increase	.....	.....	7,950	4,950	.....	150	.....	4,550	5,700	10,000	70,000
Decrease	3,400	1,200	.....	.....	650	.....	750	.....	.....	.....	.....

TEXAS

	Jan 5	Dec. 29
(Outside Gulf Coast)		
PANHANDLE DISTRICT		
Carson County	5,750	5,800
Gray County	22,300	21,800
Hutchinson County	28,550	28,400
Wheeler County	800	700
Others	2,350	2,400
Total	59,750	59,100
NORTH TEXAS		
Archer County	18,400	18,600
Burkburnett	10,000	10,250
Electra	14,100	14,200
Iowa Park-KMA	5,000	4,300
Montague and Cooke Cos.	9,600	9,700
Wilbarger	30,500	30,000
Others	600	600
Total	88,200	87,650
WEST CENTRAL TEXAS		
Brown County	9,650	9,700
Callahan County	3,600	3,600
Coleman County	3,850	3,900
Eastland-Desdemona	6,900	6,950
Jack County	1,700	1,750
Palo Pinto County	400	400
Shackelford County	11,200	10,300
Stephens County	7,350	7,450
Throckmorton County	800	800
Young County	8,000	8,100
Others	700	700
Total	54,150	53,650
WEST TEXAS		
Crane-Upton Counties	51,200	51,800
Crockett County	2,500	2,450
Howard County	36,800	37,000
Jones County	6,000	6,200
Mitchell-Scurry Counties	2,900	2,800
Pecos County	73,100	72,700
Reagan County	18,500	18,250
Winkler County	161,700	156,200
Others	1,900	1,950
Total	354,600	349,350
EAST CENTRAL TEXAS		
Boggy Creek	2,500	2,200
Corsicana-Powell	9,750	9,800
Currie	500	500
Mexia	6,100	6,200
Nigger Creek	700	700
Richland	500	500
Wortham	1,400	1,450
Total	21,450	21,350
SOUTHWEST TEXAS		
Dale	900	950
Laredo District	10,000	10,200
Luling	13,250	13,500
Lytton Springs	950	1,000
Somerset	700	700
Salt Flat	9,900	8,350
Others	1,400	1,500
Total	37,100	36,200
T'tl Tex. (Outside Gulf Coast)	615,250	607,300
TEXAS GULF COAST		
Barbers Hill	1,200	850
Batson	1,300	1,300
Big Creek	2,300	2,350
Blue Ridge	6,000	6,300
Boling	2,950	3,100
Damon Mound	800	950
Goose Creek	6,500	6,300
Hull	10,200	10,000
Humble	4,500	3,450
Orange County	3,300	3,400
Pierce Junction	12,000	14,500
Raccoon Bend	1,500	900
Saratoga	950	950
Sour Lake	2,900	3,000
South Liberty	6,400	6,200
Spindle Top	35,500	35,850
Sugar Land	5,450	4,600
West Columbia	7,300	7,400
Others	3,300	3,500
Total	114,350	114,900
Texas Total	729,600	722,200

OKLAHOMA

	Jan 5	Dec. 29
North Braman	2,550	2,550
South Braman	1,200	1,200
Blackwell	3,100	2,950
Hubbard	2,250	2,250
Thomas	950	950
Tonkawa	11,500	11,500
Garber	6,800	6,800
Burbank	24,300	24,100
Osage (outside Burbank)	26,300	26,300
Cushing	21,000	20,900
Yale Jennings	7,750	7,750
Davenport	1,700	1,700
Bristow Slick	19,600	19,650
North Okmulgee	14,300	14,300
Lyons Deaner	4,050	4,100
Cromwell	8,200	8,250
Papoose	3,600	3,600
Wewoka	5,300	5,300
Seminole	40,250	42,000
Bowlegs	43,550	46,550
Searight	9,100	9,600
Little River	86,700	85,800
Earlsboro	71,450	73,000
Duncan District	7,500	7,500
Graham	4,650	4,650
Fox	1,500	1,500
Healdton	13,400	13,450
Hewitt	8,850	8,900
Scholem Alechem	14,300	14,300
Pearson	1,700	1,650
St. Louis	136,300	136,700
Allen	27,750	28,000
Maud	26,250	26,000
Oklahoma City	5,650	5,700
Others	56,400	53,700
Total	719,750	723,150

CALIFORNIA

	Jan 5	Dec. 29
Santa Fe Springs	120,000	107,500
Long Beach	180,000	183,000
Huntington Beach	49,000	50,000
Torrance	15,500	15,500
Dominguez	10,000	10,000
Rosecrans	6,800	6,800
Inglewood	28,000	28,200
Midway-Sunset	75,000	75,000
Ventura Avenue	50,000	51,800
Seal Beach	28,000	28,500
Others	152,300	152,600
Total	714,600	708,900

KANSAS

	Jan 5	Dec. 29
Greenwood County	24,050	24,100
Florence-Covert	950	950
Peabody-Ebling	3,250	3,250
Eldorado-Towanda	12,750	12,800
Augusta-Fox Bush	3,050	3,050
Rainbow Bend	1,200	1,200
Russell	3,500	3,700
Churchill	7,550	7,200
Oxford	5,700	6,750
Sedgewick	6,600	6,900
Others	28,500	28,400
Total	97,100	98,300

NORTHERN LOUISIANA

	Jan 5	Dec. 29
Homer	4,050	4,050
Haynesville	5,550	5,550
Caddo Light	8,950	9,450
Caddo Heavy	2,550	2,800
DeSoto-Red River	4,050	4,050
Elm Grove	600	600
Bellevue	900	850
Cotton Valley	3,250	3,200
Urania	6,000	6,000
Pleasant Hill	500	500
Totals North Louisiana	36,400	37,050
LOUISIANA GULF COAST		
Bayou Boullion	500	500
East Hackberry	5,500	5,800
Edgerly	900	1,000
Evangeline	900	950
Lockport	4,400	4,600
Serrento	1,100	1,200
Sulphur Dome	3,000	3,500
Sweet Lake	950	1,050
Vinton	4,000	4,400
Others	800	850
Total Louisiana Gulf Coast	22,050	23,850
Louisiana Total	58,450	60,900

ARKANSAS

	Jan 5	Dec. 29
El Dorado	4,950	4,950
Champagnolle	11,850	11,400
Smackover Light	7,100	7,100
Smackover Heavy	52,000	52,300
Stephens	1,000	1,000
Nevada	1,500	1,550
Lisbon	1,700	1,650
Others	100	100
Total	80,200	80,050

MOUNTAIN STATES

	Jan 5	Dec. 29
WYOMING		
Salt Creek	35,850	31,450
Grass Creek	2,400	2,150
Elk Basin	900	800
Big Muddy	2,450	2,500
Lost Soldier	3,700	3,650
Rock River	2,450	2,350
Lance Creek	350	350
Oregon Basin	2,900	3,650
Others	6,600	5,900
Total	57,600	52,800
MONTANA		
Cat Creek	1,500	1,550
Sunburst	7,100	7,100
Pondera	800	2,200
Others	...	100
Total	9,400	10,950
COLORADO		
Moffats (Craig)	1,150	1,000
Fort Collins	2,500	2,200
Florence	1,350	1,000
Others	2,500	2,450
Total	7,500	6,650
NEW MEXICO		
Table Mesa	...	100
Artesia	1,100	1,050
Hogback	500	500
Rattlesnake	1,900	1,400
Others	100	100
Totals	3,600	3,150
Totals Mountain States	78,100	73,550
EASTERN STATES		
(Including Ill., Ind., Ohio, W. Va., Pa., Ky., and N. Y.)	113,250	114,000
PRODUCTION SUMMARY		
East of Rockies	1,798,350	1,798,600
Total U. S.	2,591,050	2,581,050

The D+B BALL GUIDE

– an exclusive feature of D+B Pumps and Valves–

D+B Standard Parker Style Pump with Thompson Gas Valve Complete

Thompson Gas Valve

Plunger Bottom Valve

D+B Simplex Insert Pump

Hydraulic Valve

assures longer life for balls and seats

THE D+B Ball Guide is an exclusive D+B pump fitting used in D+B blind cages to control the movement of the valve ball. It is made of hardened steel, accurately machined to maintain proper ball clearances. It limits ball lift and also guides the ball to the seat. The ball guide is contained by means of a tubular standing valve sleeve which, in turn is screwed to the adjacent pump fittings. In this way the ball guide is securely clamped between shoulders. Ample fluid passage is afforded, and the ball contact on the guide fits the curvature of the ball surface, assuring longer life for both the ball and guide. It is leak-proof due to the fact that no welded stop pins are used. Reliable steel fittings, machined from solid bar steel and hardened, offer security over cored castings.

Write today for folder describing this D+B aid to prolonged life of balls and seats. Complete details, prices, etc., will be sent you on request.

EMSCO — A Complete Line of Better Oil Well Equipment

D+B — A Complete Line of Better Pumping Equipment

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EMSCO DERRICK & EQUIPMENT COMPANY

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Emsco Steel Equipped Wells Are Safe

COMPLETIONS FOR PAST WEEK IN U.S. FIELDS

SUMMARIZED REVIEW OF FIELD RESULTS

State—	Completions This Week	Completions Last Week	Producers This Week	Producers Last Week	Gas Wells This Week	Gas Wells Last Week	Failures This Week	Failures Last Week	Initial Production This Week	Initial Production Last Week
Arkansas	7	6	5	4	..	..	2	2	396	1,166
California	16	15	15	14	..	..	1	1	29,440	14,650
Colorado	..	4	..	4	..	..	..	..	...	317
Illinois	1	3	..	2	..	..	1	1	...	22
Indiana	1	10	..	4	..	1	1	5	...	70
Kansas	5	5	1	2	1	..	3	3	75	155
Kentucky	29	29	14	20	2	..	13	9	209	494
Louisiana	10	14	1	8	4	6	5	..	65	2,565
Michigan	11	9	9	7	1	2	1	..	1,450	615
Montana	..	10	..	10	..	..	..	..	...	2,793
New York	..	18	..	18	..	..	..	..	...	44
Ohio	50	42	18	18	17	17	15	7	538	307
Oklahoma	57	65	38	31	4	9	15	25	30,710	24,596
Pennsylvania	3	55	..	51	3	4	..	..	...	123
Texas	138	129	85	88	8	5	45	36	76,398	120,671
West Virginia	17	11	4	3	11	7	2	1	48	38
Wyoming	..	..	..	..	..	..	..	..	...	...
Total	345	425	190	284	51	51	104	90	139,329	168,626
Increase this week	..	..	..	..	..	..	14	..	...	...
Decrease this week	80	..	94	..	..	..	..	..	29,297	...

OKLAHOMA

Company, Well and Location	Initial Production Bbls.	Depth
CARTER COUNTY—		
Sinclair O. & G. Co., Daugherty 5, sw se ne, 29-2s-3w	¶39	2657
Schermerhorn Oil Co. et al, Crockett 7, nw se ne, 22-1s-3w	40	2615
Shasta Oil Co., Chambers 2, nw sw sw nw, 2-2s-10w	21	2179
COTTON COUNTY—		
Jenkins et al, Record 2, nw ne sw, 6-2s-10w	*	2130
CREEK COUNTY—		
Bengall Oil Co., Tiger 8, ne sw sw, 17-17-7e	700	2742
Tiger 7, se sw, 17-17-7e	135	2710
GRANT COUNTY—		
Argo Oil Co., Lane 1-A (owd) ne, 27-27-3w	*	4330
KIOWA COUNTY—		
Russell & Sloan, Rushton 1, ne sw se, 6-5n-14w	*	1524
Aregood et al, Finney 1, nw se sw, 8-6-16w	*	501
LOGAN COUNTY—		
J. E. Crosbie et al, Shaffer 3, sw nw 20-19-4w	2160	6108
Sinclair O. & G. Co., Webber 3, sw se se, 18-19-4w	1043	6165
MARSHALL COUNTY—		
Ward Merrick, Null 1, ne nw nw, 24-5s-5e	*	767
MUSKOGEE COUNTY—		
P. O. Miller et al, Jackson 1, se ne nw, 8-15-16e	35	1655
J. R. Graves et al, Flowers 5, c se nw, 5-13-16e	30	1851
Babcock Bros., Barnett 4, se nw ne, 8-15-15e	75	1594
Mack Drilling Co., Friday 1, se ne, 7-15-15e	200	1206
Glasco, Dean 1, sw ne nw, 7-13-18e	*	2032
H. L. Jolly, Crabtree 1, se ne, 2-14-18e	*	1158
C. O. Buckels, Simmons 1A, sw se nw, 9-15-15e	*	1736
OKMULGEE COUNTY—		
W. B. Pine, Henry 1, (owd) se ne ne, 30-12-13e	20	2237
Star Dev. Co., Scott 5, ne nw se ne, 15-13-14e	10	1370
Riney & Williams, Stevens 4, nw sw se, 9-14-14e	¶6	1750
Unger Bros., Harrison 7, se sw, 24-15-14e	¶6	1581
Kirkland and Son, DePriest 1A, c se ne, 19-15-13e	*	2277
OSAGE COUNTY—		
Lewis Prod. Co. et al, No. 1, se, 15-26-6e	447	2992
PONTOTOC COUNTY—		
W. R. Ramsey, Whitney 3, ne sw, 19-5-8e	450	2633
POTTAWATOMIE COUNTY—		
Mid-Kansas O. & G. Co., Lunay 4, se nw nw, 30-7-5e	345	4175
Shell Pet. Corp., Youts 1, nw sw, 28-7-5e	61	4351
Magnolia Pet. Co., Youts 2, sw se sw, 20-7-5e	1180	4515
Tull Fyke "B" 2, ne se, 20-7-5e	30	4380
T. B. Slick, Davis 1W, sw nw ne, 18-7-5e	5562	4108
Pure Oil Co., Dodson 1, ne se se, 26-7-4e	135	4312
Gypsy Oil Co., Dodson 3, se ne se, 26-7-4e	500	4264
Sinclair O. & G. Co., Neeley "B" 2, ne se sw, 25-7-4e	305	4207
Gilbreath 1, nw se se, 25-7-4e	607	4217
McCulloch Oil Co., Smith 5, se nw se, 25-7-4e	100	4237
Smith 4, nw sw se, 25-7-4e	350	4205
Shaffer O. & R. Co., Cherry 1, ne se se, 23-7-4e (owd)	2305	4226
Sinclair O. & G. Co., Bellars 2, nw ne ne, 19-8-5e	2455	4148
Pure Oil Co., Lindley 3, nw se, 18-8-5e	2306	4095
Lindley 2, sw se, 18-8-5e	2300	4140
Lindley 1, se sw se, 18-8-5e	2563	4115
Twin State Oil Co., Sexton 1, nw, 32-7-5e	*	4452
The Texas Co., Zoeller 1, nw sw se, 30-7-5e	*	4275
Mid Kansas O. & G. Co., Lunay 3, sw nw nw, 30-7-5e	*	4501
SEMINOLE COUNTY—		
Gilcrease Oil Co., Reed 1, ne sw nw, 18-5-8e	70	2676
Carter Oil Co., Larney 4, se nw nw, 24-7-6e	1129	4308
Gypsy Oil Co., Gotcha 7, sw ne sw, 23-7-6e	955	4580
The Texas Co., Hotulke 1, ne se se, 22-7-6e	558	4190
Independent O. & G. Co., Davis 4, ne sw sw, 13-7-6e	955	4317
Champlin Ref. Co., Harber 1, sw ne sw, 14-7-5e	*	4424
STEPHENS COUNTY—		
Magnolia Pet. Co., Hanson 2, nw sw ne, 12-1s-4w	90	3254
Wirt Franklin Pet. Corp., Brittain 6, nw se, 12-1s-4w	180	3254
WAGONER COUNTY—		
Horner et al, Kidd 1, csl nw nw, 28-18-17e	¶1½	817
Elk Drilling Co., Childers 7, nw sw nw, 22-18-17e	¶5	793
H. W. Kishkaddon, Howard 2, ne sw ne, 8-15-16e	*	1410
Peterson & Young, Marshall 1, sw nw, 24-16-16e	*	990

KANSAS

Company, Well and Location	Initial Production Bbls.	Depth
COFFEY COUNTY—		
Clark, Braden et al, Douglass 1, nw se ne, 11-22-15e	*	1340
COWLEY COUNTY—		
Trees Oil Co., Skinner 1, c nw sw, 12-32-6e	¶2½	2475
Kentucky Nitrogen & Oxygen Co., Melick 1, cnl se sw, 13-34-6e	*	1450
GREENWOOD COUNTY—		
Simmons & Rhodes, Luthi 2, nw sw sw, 29-22-13e	75	1710
C. B. Christy, Peterson 1, se nw se, 24-24-9e	*	2337

CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
HUNTINGTON BEACH—		
Standard Oil Co., Bolsa 40	150	4435
INGLEWOOD—		
Standard Oil Co., L. A. I. 58	625	2600
LONG BEACH—		
Continental Oil Co., Denio 1	800	5780
C. W. Fourl, Sagamore 1	800	6255
Olympic Oil and Refining Co.'s Rogers 3	125	6490
Richfield Oil Co., Conett 2	600	6350
Lekas 3	100	7150
RINCON—		
Southern Pacific Land Co., No. 3..	100	3410
ROUND MOUNTAIN—		
Shell Co., Freeman 2	140	1750
SANTA FE SPRINGS—		
George F. Getty, No. 19	1200	5930
Richfield Oil Co., Howard 1	7100	5745
Ring Pet. Corp., No. 1	2600	5690
Union Oil Co., Alexander 14	6500	5540
Universal Consolidated Oil Company, O'Connell 2	7000	5540
VENTURA—		
Associated Oil Co., Lloyd 36	1600	6800

EASTERN STATES

PENNSYLVANIA

Company, Well and Location	Initial Production Bbls.	Depth
GREENE COUNTY—		
W. Va. Nat. Gas Co., Hewitt 1	¶2½	....
Carnegie Nat. Gas Co., Fox 1	¶1	....
E. W. Maple & Co., Maple 1	¶2	....

WEST VIRGINIA

Company, Well and Location	Initial Production Bbls.	Depth
WAYNE COUNTY—		
United Fuel Gas Co., Lincoln Land Co. 1	¶¼	....
Lincoln Land Co. 2	¶¼	....
Meabon & Huffman, Osborne 1	¶¼	....
WOOD COUNTY—		
Congdon & Co., Grant 10	5	....
Grant 12	25	....
LINCOLN COUNTY—		
United Fuel Gas Co., Horse Creek Land Co. 19	¶¼	....
Toney 1	¶½	....
CABELL COUNTY—		
W. Va. Gas Co., Ross 19	¶1	....
Harshbarger Oil & Gas Co., Kline 2	¶1	....
BOONE COUNTY—		
Pure Oil Co., Williams Coal Co. 239	10	....
Hope Nat. Gas Co., Chambers 1	¶1½	....
RITCHIE COUNTY—		
South Penn Oil Co., Ritchie Mines 71	8	....
PUTNAM COUNTY—		
Baker & Osborne, Shoppers-Farmer 5	¶1½	....
MARION COUNTY—		
Manufacturers Light & Heat Co., Brown 1	¶2	....
MARSHALL COUNTY—		
Manufacturers Light & Heat Co., Wendt 4	¶2	....
WOOD COUNTY—		
C. S. Reed, Athey 1	*	....
WETZEL COUNTY—		
Manufacturers Light & Heat Co., Kiger 1	*	....

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Charleston, W. Va.

KENTUCKY

Company, well and Location	Initial Production Bbls.	Depth
DAVIESS COUNTY—		
Jetsan Oil Co., Hinton 1	35	....
Leeper Oil Co., Mahloskey 7	20	....
Ohio Oil Co., Weller 3	5	....
Maxey, Lewis & Ogle, Gilmore 1	*	....
Huff & Calderwood, Sharp 1	*	....
Johnson & Young, Mays 1	*	....
Kenrock Oil Co., Gilmore 1	*	....
M. B. French & Co., Howard 5	*	....
Hinton 3	¶1¼	....
French & Carpenter, Mayfield 1	*	....
BARREN COUNTY—		
Esslinger Oil Co., Glass 17	15	....
Ziegler Bros., Mansfield 23	10	....
Fred Moore, Moore 15	8	....
ALLEN COUNTY—		
Snowden-McSweeney Co., Oliver 33	3	421
S. T. Strum & Co., Starks 1	*	354
Mid-Southern Oil Co., Woods 27	*	268
McLEAN COUNTY—		
Swiss Oil Corp., Lacklett 1	*	1500
HANCOCK COUNTY—		
Leeper Oil Co., Matthews 7	*	....
OHIO COUNTY—		
Cumberland Pet. Co., Hamilton 12	15	....
Hamilton 13	20	....
Ohio Oil Co., Phillips 3	10	....
C. Claypool & Co., Ralph 8	15	525
Claypool & Co., Reynolds 2	*	....
F. M. Sirman, Friendship Church lot 1	25	....
Leeper Oil Co., McKinley 4	25	....
S. H. Russell & Co., Bellamy 3	3	....
Wood Oil Co., Inc., Griffith 2	¶1	....
National Deposit Bank Co., Kelley 1	*	....
Creek Drilling Co., Westerfield 2	*	....

SOUTHEASTERN OHIO

Company, well and Location	Initial Production Bbls.	Depth
MONROE COUNTY—		
Ohio Fuel Gas Co., Blair 1	¶¾-20	1326
Dunbar Oil Co., Kerr 12	10	1352
Wittmer Properties Co., Burkhalter 1	¶1¾	1946
Frank Ward, Ward 4	*	1492
WASHINGTON COUNTY—		
Braden Oil Co., Cooper Estate 5	*	1883
Thomas P. Cisler, Decker 5	¶¼	....
H. O. Schramm & Co., Schramm 6	2	....
JEFFERSON COUNTY—		
Blackburn & Co., Alban 1	*	....
S. M. Coe & Co., Foster 1	*	....
MORGAN COUNTY—		
Ohio Fuel Gas Co., Joy 6	¶¼	1427
NOBLE COUNTY—		
Local Oil Co., Gerst 3	*	428

CENTRAL OHIO

Company, well and Location	Initial Production Bbls.	Depth
MEIGS COUNTY—		
C. D. Sloan & Co., Stobart 1	60	1050
Tyree & Co., Stobart 3	10	607
Eberback 1	¶¼-5	1828
Bartin Oil Co., Bartells 2	¶½	1880
Lee Stout & Co., Woodyard 1	*	1340
Ohio Fuel Gas Co., Bernhardt 1	¶¼	2714
PERRY COUNTY—		
Coolridge Oil & Gas Co., Nixon 1	¶1	3462
R. C. Miller & Co., Brown 1	35	....
Hopewell Oil & Gas Co., Veon 1	230	....
Ohio Fuel Gas Co., Moore 1	¶½	....
Wehrle Oil & Gas Co., Baker 1	18	3161
ASHLAND COUNTY—		
The Kemrow Co., Fluke 2	¶5½	....
Curtis & Co., Devault 6	17	....
The Kemrow Co., Glass 1	*	....
Logan Gas Co., McFadden 1	*	....
SUMMITT COUNTY—		
East Ohio Gas Co., Luna Lake Club 1	¶4¼	....
Athey Drilling Co. 2	¶1	....
G. W. Crouse, Crouse 1	¶3½	....
F. A. Brendall & Co., Hose 3	*	....
LICKING COUNTY—		
Preston Oil Co., Morris 3	10	766
Wright 10	10	720
Heisey Gas Co., Davis Heirs 6	*	1350
HOCKING COUNTY—		
Gordon Oil Co., Stone 7	70	2845
Bell & Scholl, Harden 2	30	....
KNOX COUNTY—		
Ohio Fuel Gas Co., Greer 2	*	2680
Koppert 2	¶1½	....
ATHENS COUNTY—		
Ohio Fuel Gas Co., Republic Coal Co. 1	*	3913
Lewis Ruff & Co., Shafer 1	*	996
HOLMES COUNTY—		
Pure Oil Co., Snyder 4	8	....
COSHOCTON COUNTY—		
Ohio Oil Co., Epley 1	2	....
GUERNSEY COUNTY—		
Buffalo Gas Co., Verb 1	¶¼	1176
VINTON COUNTY—		
Townsend & Co., Huston 1	¶1	1050
JACKSON COUNTY—		
Ohio Fuel Gas Co., Hines 2	¶¾	2714
CUYAHOGA COUNTY—		
L. M. McGrath, Saunders 1	¶1	....

NORTHWESTERN OHIO

Company, Well and Location	Initial Production Bbls.	Depth
AUGLAIZE COUNTY—		
Real Oil Co., Wierwillie 2	10	1238
WOOD COUNTY—		
Henderson, Messer & Co., Buckingham 1	1	....
HARDIN COUNTY—		
Kurtz Gas Co., McKinley 1	¶3	1252
WYANDOT COUNTY—		
Simon Purcell, Purcell 1	*	1376
HANCOCK COUNTY—		
J. Hoffmaster, Shaufelberger 1	*	1238

INDIANA

Company, Well and Location	Initial Production Bbls.	Depth
SPENCER COUNTY—		
Cord Dooley, Wiser Oil 1	*	1440

ILLINOIS

Company, Well and Location	Initial Production Bbls.	Depth
CUMBERLAND COUNTY—		
R. G. Holmes & Co., Talbot 1	*	600

MICHIGAN

Company, Well and Location	Initial Production Bbls.	Depth
ISABELLE COUNTY—		
Chippewa Oil Syndicate, McClintick 1	150	3500
MUSKEGON COUNTY—		
Kelley Goldboss & Co., Giles 1	¶½-350	2045
A. S. Cochran, Taggert 2	¶6-350	2060
Reed Oil Co., Hill 1	200	1620
Johnson O. & R. Co., Allsburg 1	140	....
Adams 1	*	2087
Triangle O&G Co., Danilcff 1	¶4-100	2068
Dixie Oil Co., Figge 10	50	....
Muskegon Oil Corp., Heinz 4	60	1914
Victor O&G Co., Collins 1	50	2070
Muskegon Dev. Co., Myler 2	¶7	....

ARKANSAS

Company, Well and Location	Initial Production Bbls.	Depth
NEVADA COUNTY—		
Humble O. & R. Co., Groves D-2, 6-14-20	25	1140
OUACHITA COUNTY—		
Little Fay Oil Co., H. Primm 3, 24-15-16	30	2084
UNION COUNTY—		
H. L. Hunt, Inc., Gregory 3, 10-17-14	211	3259
Lion O. & R. Co., C. B. Nash 2, 6-17-13	100	3051
Tate & Morefield, W. W. Smith 1, 6-18-13	*	3302

NORTH LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
BOSSIER PARISH—		
Doern et al, Bolinger 1, 9-22-11	*	4317
DESOTO PARISH—		
R. O. Roy, Whittaker 1, 4-13-13	*	2950
OUACHITA PARISH—		
West Virginia O. & G. Co., Fee 6, 6-18-4e	¶2¾	2203
RICHLAND PARISH—		
Ouachita Nat. Gas Co., Pardue 4, 5-15-6e	¶48¾	2440
WEBSTER PARISH—		
Magnolia Pet. Co., H. H. Branton 1, 5-22-9	¶5½	2706

TEXAS

EAST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
PANOLA COUNTY—		
Eureka Nat. Gas Co., Gulley 1, Jas. Matthews sur	¶4	960
Magnolia Pet. Co., L. Fletcher 2, B. C. Jordan sur	¶47½	2560
Texas Co., T. C. Adams A-7, S. B. Lacy sur	¶2¾	958

TEXAS GULF COAST

Company, Well and Location	Initial Production Bbls.	Depth
BARBERS HILL—		
Humphreys Corp., Kirby C-1	2500	5231
BIG CREEK—		
Gulf Prod. Co., T. W. Davis 50	210	3665
BLUE RIDGE—		
Gulf Prod. Co., Blakely B-16	200	3940
J. S. Abercrombie & Co., West-Schenck 4	150	3925
Navarro Oil Co., Robinson A-8	*	3025
Humphreys Corp., West Schenck 3	500	3540
GOOSE CREEK—		
Jim McMurry, Grace Addey 3	*	2660
HULL—		
Gulf Prod. Co., E. M. Scarbrough 19	150	3825
RACCOON BEND—		
Humble, Beal 1	300	3558
SOUTH LIBERTY—		
Gulf Prod. Co., Wm. Chambers Fee 8	50	840
McLean 3	500	805
Sun Oil Co., Mitchell 19	200	910
Mitchell 21	300	995
Mitchell 22	75	1250
Mitchell 25	1200	855
SUGARLAND—		
Humble O. & R. Co., Dew 1	1500	3591

SOUTHWEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
SALT FLAT—		
Gulf Prod Co., W. L. Smith 1	300	2725
W. L. Smith 2	600	2697
W. L. Smith 3	250	2702
W. L. Smith 4	600	2712
Connally 5	700	2722
J. J. Davis 1	1500	2737
M. K. Towns, Hickman 2	40	2717
J. S. Abercrombie, Moses 3	75	2724
Golden West Oil Co., Wilson 6	sw	2734
Cora Malone 1	¶3	1132
Luling Oil & Gas Co., Carter 3	*	2918
Radcliff et al, Malone C-1	25	2734
Sun Oil Co., C. Malone 3	250	2714
Cranfill & Reynolds, Smith 3	500	2687
Humble O. & R. Co., Johnson 1	50	2690
Lutex Oil Co., Wilson 3	100	2656
Davis 6	150	2575
LYTTON SPRINGS—		
Humble O. & R. Co., H. H. Glass 1	*	1602
JIM HOGG COUNTY—		
Alworth, Stevens, Hild Co., M. Garza 15, Randado	25	1028
Brooklyn Oil Co., Garza 1, blk 2, sur 40	*	2115
WEBB COUNTY—		
Onyx Oil Co., Krauter 2	50	2350
Houston Gulf Gas Co., S. Benavides 1, sur 693	¶35	....
Rycade Oil Corp., Yeager-Strohman 7, Albercas	600	2163
Yeager-Strohman 9, Albercas	340	2152
O. W. Killam, Bruni 32	*	2332
Sun Oil Co., Yeager-Strohman A-9, Albercas	300	2167
Yeager-Strohman A-10, Albercas	200	2164
Yeager-Strohman A-11, Albercas	250	2163
ZAPATA COUNTY—		
South Texas Prod. Co., Jennings 2	¶10	1435
O. W. Willam, Lopez 1	*	1440

EAST CENTRAL TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
CEDAR CREEK FIELD—		
Why Not Oil Co., Wray 2	75	2896
LIMESTONE COUNTY—		
Mexia Dev. Corp., Black 1	*	2690

TEXAS PANHANDLE

Company, Well and Location	Initial Production Bbls.	Depth
MOORE COUNTY—		
Phillips Pet. Co., Sneed-James 2	80	3212

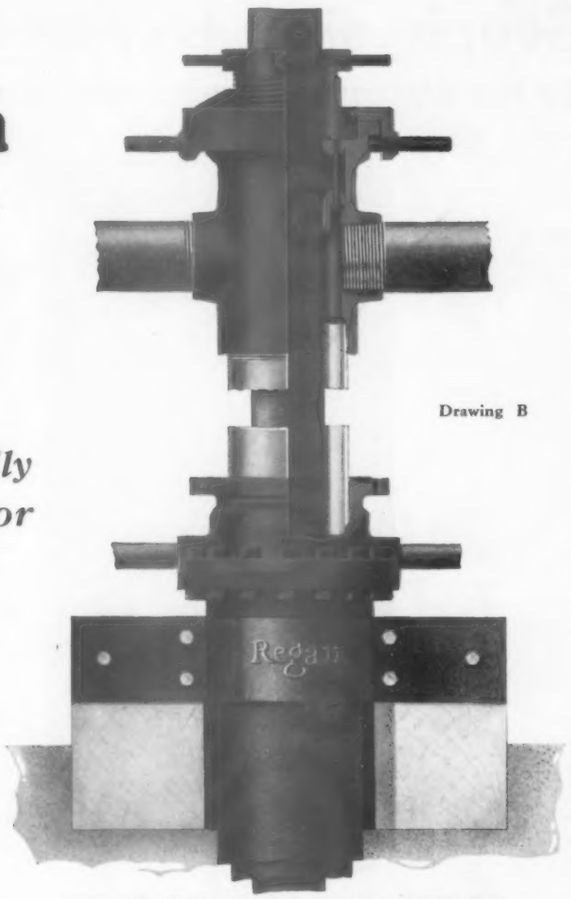
NORTH TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
ARCHER COUNTY—		
Perry Browning et al, Fee 1	*	880
W. B. Corlett-American Ref. Properties, Cernosek 5	25	1434
Gulf Prod. Co., E. Alexander 1	45	1424
Humble O. & R. Co., L. L. Hudson 1	20	1174
J. B. Peacock et al, Williams 2	40	576
Perkins & Cullum, Williams 1	10	575
Reno Oil Co., Parrish 6-A	*	1615
G. R. Ridgeway et al, Plowman 2-B	*	1040

Regan Combination Drilling Blowout Preventer

--for drilling with pipe or Kelly

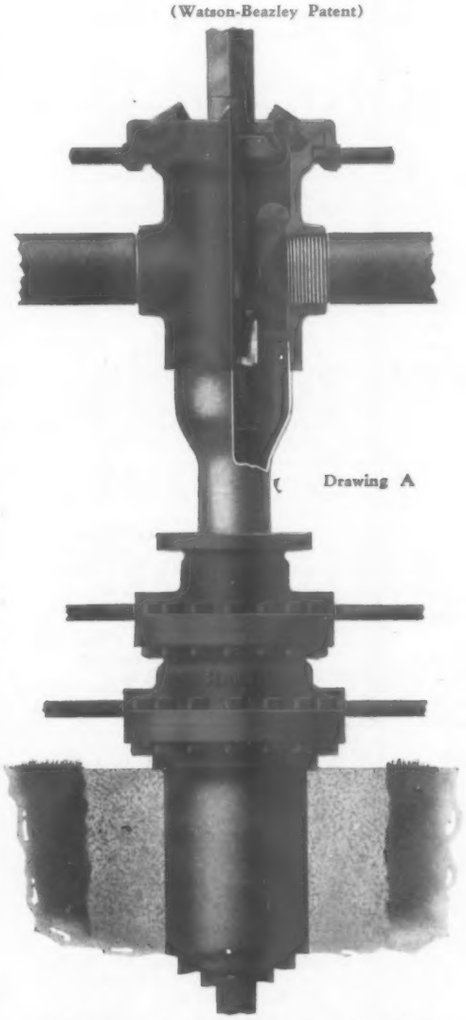
--or running and pulling pipe or casing



Drawing B

The above illustration shows the Regan Drilling Blowout Preventer indicating method of sealing drill pipe or casing. A compression ring is provided.

(Watson-Beazley Patent)



Drawing A

The above illustration shows the Regan Drilling Blowout Preventer with Kelly sealed. A special sub is provided for the Kelly.

This Blowout Preventer provides positive control during all drilling operations. It is recommended for use in conjunction with the Regan Control Head. It provides a positive seal-off around the Kelly, as well as the drill pipe, and also controls casing when running in or pulling.

When used in connection with the Kelly (Drawing A) the only operation necessary to effect a positive seal is to raise the Kelly which is provided with a special sub that compresses the packing ring within the body. This enables the operator to mud off pressure when necessary.

When pulling or running in casing or drill pipe, means are also provided for effecting a positive seal by using two semi-circular compression rings in place of the Kelly assembly. A tight seal is effected by either the weight of the casing or drill pipe resting upon the compression rings or by manual operation of the screw ring, as shown in Drawing B.

The illustrations show the Blowout Preventer installed in connection with the Regan Control Head.

Regan

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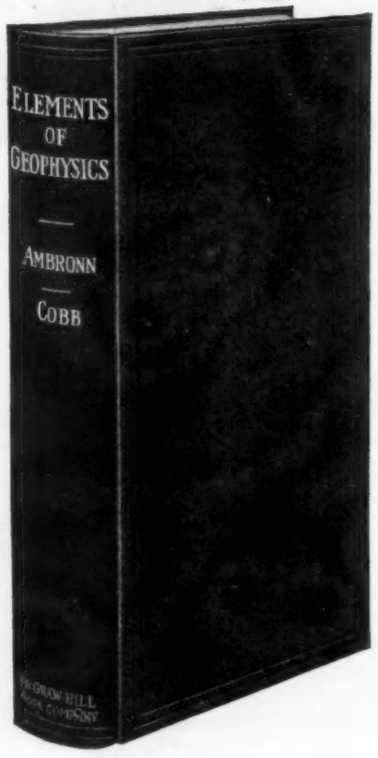

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COOKE COUNTY—		
Humble O. & R. Co., Poteet 1	15	1535
ELECTRA—		
Bullington et al, Jennings 9	35	1495
Cooper & Mischler, Waggoner Bros. 14	*	1537
K-M-A & IOWA PARK—		
Hammond & Continental Oil Co., Munger 1-A	4	688
Hammond & Garrett, Mitchell 5	25	1333
Humble O. & R. Co., Taylor 4	150	1487
J. T. Lobbin et al, H. B. Hines 1	4	304
H. B. Hines 2	*	303
H. B. Hines 3	*	315
Staley-Wynne et al, K. & K. 9	125	1480
MONTAGUE COUNTY—		
Pure Oil Co., Keck 11-A	15	832
WILBARGER COUNTY—		
Burton & Shaw, Waggoner 1-F	*	2410
Golding-Cochran et al, Waggoner 1-I	*	1942
Waggoner Ref. Co., Waggoner 5-G	100	2343
Waggoner 7-G	250	2430
Waggoner 7-A-H	220	2418
Waggoner 14-H	160	2340
YOUNG COUNTY—		
Fain-McGaha Oil Corp., Campbell 2-F	*	960
Pennell et al, Baker 1	*	578
Petroleum Prod. Co., Boley 1	*	1200
Parrish 4-A	25	1105
Prairie O. & G. Co., Campbell 5	95	968
Wichita Prod. Co., Farmer 1-B	*	1100
CENTRAL WEST TEXAS		
BROWN COUNTY—		
Amerada & Roeser-Pendleton, Mauldin 1	*	1433
Bettis et al, Merritt 1	*	1003
Bruce et al, Shields 4	* 5	499
Bryant & Paramount Royalties, Mayes 1	10	555
Gore & Brown Mayes 1	¶¼	720
Humble O. & R. Co., Hodnett 17-A	5	1218
Mitcham et al, Marr 1	10	1057
Young Bros.-Alexander & Woodley Pet. Co., Butler 3	25	1257
Armstrong 7	85	1225
CALLAHAN COUNTY—		
Beddingfield & Welch Bros., Cavanaugh 5	*	544
Branch Bros. et al, Windham 1	*	2715
Ewmo Oil Corp., Jones 1	*	517
Meade & Hoffman, Cowling 1	*	990
Reiter-Foster Oil Corp., Hatchett 7	*	415
Hatchett 15	*	965
The Texas Co., Hatchett 13	20	360
Hatchett 14	20	356
Hatchett 15	*	367
COLEMAN COUNTY—		
Anzac Oil Co., Alexander 1	120	2306
Head et al, Gray 1	*	377
Mid-West Exploration Co., Gill 2	*	1089
The Texas Co., Hayes 4	¶5¼-45	1139
EASTLAND COUNTY—		
Parsons et al, Scott 4	¶4¼	3134
Schimmel Prod. Co., Parsons 1	*	3560
TP Coal & Oil Co., P. O. Ranch Fee 4	*	1207
SHACKELFORD COUNTY—		
Atlantic Oil Prod. Co., Green 1	*	1253
Cranfill & Reynolds, Inc., Flippen 2-B	*	985
Mid-Sup Oil Corp., Nail 2	*	1595
Simms Oil Co., Lones 3	50	794
Tannehill et al, Matthews 1 (Sec. 29)	*	1140
WEST TEXAS		
HOWARD COUNTY—		
Gulf Prod. Co., H. R. Clay 4	145	1838
Group One Oil Corp. & Marland Prod. Co., Settles 6-A	615	2220
JONES COUNTY—		
Atkinson-Sandefer et al, Hudspeth 1	50	2585
PECOS COUNTY—		
McMan O. & G. Co., M. A. Smith 4-C	1440	1694
WINKLER COUNTY—		
Anderson et al, Ida Hendrick 1	*	3190
Gulf Prod. Co., Hendrick 31	185	3073
Republic Prod. Co., Hendrick 6-A	15,000	2745
Hendrick 4-B	1000	2615
Shell Pet. Corp. & Texas Co., Cowden 5-A	1700	3012
Southern Crude Oil Pur. Co. & Dixie Oil Co., Hendrick 1-B-3-T-68	100	3050
Hendrick 4-D-2-T-67	40	3002
Southern Crude & R. A. Westbrook, Hendrick 1-C-T-89	450	3020
Hendrick 25-M-T-88	1800	2829
Hendrick 28-M-T-88	6360	2685
Hendrick 29-M-T-88	25,000	2725
Hendrick 30-M-T-88	4320	2735
Hendrick 1-Q-T-88	915	2667

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CRUDE OIL PRICE QUOTATIONS

PRICE CHANGES

Effective January 4, all grades of Pennsylvania crude were advanced 25 cents per barrel.

On January 7, Humble Oil and Refining Company reduced the price of Mirando crude 20 cents a barrel.

CURRENT POSTINGS

EASTERN STATES

	Jan. 8 1929
Penna Grade Oil in New York Transit Lines (New York)	$4.10
Brandford District Oil in National Transit Lines (Pennsylvania)	4.10
Penna Grade Oil in National Transit Lines (Pennsylvania)	4.00
Penna Crude Oil in Southwest Pennsylvania Lines (West Virginia)	4.00
Penna Grade Oil in Eureka Pipe Line Lines (Pennsylvania)	3.90
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	3.85
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia) (July 13)	**1.45**
Corning 35-cent Grade Oil in Buckeye Pipe Line Co.'s lines (August 8)	**1.80**
Corning 25-cent Grade Oil in Buckeye Pipe Line Co.'s Lines (Aug. 8)	**1.90**
Somerset Oil in Cumberland Pipe Line lines (Kentucky) (Sept. 14, 1928)	**1.75**
Ragland Grade Oil in Cumberland Pipe Line lines (Kentucky) (August 1)	**.95**
Keister (Pennsylvania)	1.20

CENTRAL STATES

Illinois	1.55
Indiana	1.37
Lima	1.60
Plymouth	1.28
Princeton	1.55
Waterloo	1.35
Wooster	1.77

WESTERN KENTUCKY

Posted by Stoll Refining Company for crude from Allen, Warren, Franklin, Davies, Barren.

All grades	1.75

MID-CONTINENT

Carter Oil Company, Gulf Pipe Line Company, Sinclair Pipe Line Company, Prairie Oil and Gas Company and The Texas Company.*

25 to 25.9 gravity	.67
26 to 26.9 gravity	.74
27 to 27.9 gravity	.81
28 to 28.9 gravity	.81
29 to 29.9 gravity	.95
30 to 30.9 gravity	1.02
31 to 31.9 gravity	1.09

	Jan. 8 1929
32 to 32.9 gravity	1.16
33 to 33.9 gravity	1.21
34 to 34.9 gravity	1.26
35 to 35.9 gravity	1.31
36 to 36.9 gravity	1.36
37 to 37.9 gravity	1.41
38 to 38.9 gravity	1.46
39 to 39.9 gravity	1.51
40 to 40.9 gravity	1.56
41 to 41.9 gravity	1.61
42 to 42.9 gravity	1.66
43 to 43.9 gravity	1.71
44 and above	1.76

*The Texas Company posts a price of 60 cents on 24 to 24.9 gravity, and Gulf's posting begins at 28 to 28.9.

MID-CONTINENT

Magnolia Petroleum Company

Below 25 gravity	.60
25 to 25.9 gravity	.67
26 to 26.9 gravity	.74
27 to 29.9 gravity	.75
30 to 30.9 gravity	.90
31 to 31.9 gravity	1.05
32 to 32.9 gravity	1.16

From 33 to 44 gravity and above, Magnolia Petroleum Company prices are the same as those of Carter Oil Company.

NORTH AND CENTRAL TEXAS

Ranger, North Texas, Mexia, Powell, Richland, Wortham, Currie, Moran, Nocona and Lytton Springs Crude

(Humble Oil and Refining Company)*

25 to 25.9 gravity	.67
26 to 26.9 gravity	.74
27 to 27.9 gravity	.81
28 to 28.9 gravity	.88
29 to 29.9 gravity	.95
30 to 30.9 gravity	1.02
31 to 31.9 gravity	1.09
32 to 32.9 gravity	1.16
33 to 33.9 gravity	1.21
34 to 34.9 gravity	1.26
35 to 35.9 gravity	1.31
36 to 36.9 gravity	1.36
37 to 37.9 gravity	1.41
38 to 38.9 gravity	1.46
39 to 39.9 gravity	1.51
40 to 40.9 gravity	1.56
41 to 41.9 gravity	1.61
42 to 42.9 gravity	1.66
43 to 43.9 gravity	1.71
44 and above	1.76

SOUTH TEXAS

Mirando	$ .80

	Jan. 8 1929
SOMERSET	
Grayburg	
Below 33 gravity	1.05
33 to 33.9 gravity	1.07
34 to 34.9 gravity	1.09
35 to 35.9 gravity	1.11
36 to 36.9 gravity	1.13
37 to 37.9 gravity	1.15
38 and above	1.17
GULF COAST	
Grade "A" all companies	1.20
Gulf Coast Light Oil, below 25	1.15
25 to 25.9 gravity	1.17
26 to 26.9 gravity	1.19
27 to 27.9 gravity	1.21
28 to 28.9 gravity	1.23
29 to 29.9 gravity	1.25
30 to 30.9 gravity	1.27
31 to 31.9 gravity	1.29
32 to 32.9 gravity	1.31
33 to 33.9 gravity	1.33
34 to 34.9 gravity	1.35
35 to 35.9 gravity	1.37
36 to 36.9 gravity	1.39
37 to 37.9 gravity	1.41
38 to 38.9 gravity	1.43
39 to 39.9 gravity	1.45
40 and above	1.47

*Humble Oil & Refining Company's postings on Gulf Coast Light stop at 35 to 35.9 Its price on all crudes above 35 to $1.37 per barrel.

Magnolia Petroleum Company's postings stop at 31 to 31.9.

MARKHAM

The Texas Company

All grades	1.00

LULING

All grades	1.00

PANHANDLE

GRAY COUNTY

(Humble Oil & Refining Company, Magnolia Petroleum Company, Gulf Pipe Line Company and Sinclair Pipe Line Company).

Below 29 gravity	.68
29 to 29.9 gravity	.75
30 to 30.9 gravity	.82
31 to 31.9 gravity	.89
32 to 32.9 gravity	.96
33 to 33.9 gravity	1.01
34 to 34.9 gravity	1.06
35 to 35.9 gravity	1.11
36 to 36.9 gravity	1.16
37 to 37.9 gravity	1.21
38 to 38.9 gravity	1.26
39 to 39.9 gravity	1.31
40 to 40.9 gravity	1.36

CALIFORNIA CRUDE OIL PRICES AT THE WELL

Following are the current prices offered by Standard Oil Company for crude oil at the well: (Price per barrel of 42 gallons in fields indicated)

Gravity	Signal Hill	Alamitos Hts Seal Beach	Huntington Beach	Inglewood	Olinda-Brea Canon	Athens-Rosecrans Dominguez	Torrance	Richfield	Whittier La Habra	Montebello	Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River	Midway Sunset Elk Hills	Buena Vista Hills	Lost Hills	Coalinga	Wheeler
14-14.9	$ .85	$ .85	$ .85	$ .85	$ .85	$ .85	$ .85	$ .85	$ .85	$ .85	$ ..	$ .50	$ .75	$ .75	$ .75	$ .75	$ .75	$ .75
15-15.9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	..	.50	.75	.75	.75	.75	.75	.75
16-16.9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	..	.50	.75	.75	.75	.75	.75	.75
17-17.9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	..	.50	.75	.75	.75	.75	.75	.75
18-18.9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	..	.50	.75	.75	.75	.75	.75	.75
19-19.9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	..	.50	.75	.75	.75	.75	.75	.75
20-20.9	.85	.85	.85	.85	.85	..	.85	.85	.85	.86	.85	..	.77	.77	.77	.77	.77	.77
21-21.9	.89	.89	.89	.89	.89	..	.89	.89	.88	.89	.88	.89	.79	.79	.79	.79	.79	.79
22-22.9	.93	.93	.93	.93	.93	..	.93	.93	.91	.92	.91	.92	.82	.82	.82	.82	.82	.82
23-23.9	.97	.97	.97	.97	.97	..	.97	.97	..	.95	.94	.95	.86	.86	.86	.85	.85	.85
24-24.9	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	..	.98	.97	.98	.90	.90	.90	.88	.88	.88
25-25.9	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	..	1.01	1.00	1.01	.95	.95	.95	.91	.91	.91
26-26.9	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	..	1.04	1.04	1.04	1.00	1.00	1.00	.94	.94	.94
27-27.9	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	..	1.07	1.08	1.07	1.05	1.05	1.05	.98	.97	.97
28-28.9	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	..	1.10	1.12	1.10	1.10	1.10	1.10	1.02	..	..
29-29.9	1.21	1.21	1.21	1.21	1.21	1.21	..	1.21	..	1.13	1.16	1.15	1.16	1.16	1.16	1.06	..	..
30-30.9	1.25	1.25	1.25	..	1.25	1.25	..	1.25	..	1.16	1.20	1.20	1.22	1.22	1.22	1.10	..	..
31-31.9	1.30	1.30	1.30	..	..	1.30	..	..	..	..	..	1.25	1.28	1.28	1.28	1.14	..	..
32-32.9	1.35	1.35	1.35	..	..	1.35	..	..	..	..	..	1.30	1.34	1.34	1.34	1.18	..	..
33-33.9	..	..	..	..	..	1.41	..	..	..	..	..	1.35	1.40	1.40	1.40	1.22	..	..
34-34.9	..	..	..	..	..	1.47	..	..	..	..	..	1.40	..	..	1.46	1.26	..	..
35-35.9	..	..	..	..	..	1.53	..	..	..	..	..	1.45	..	..	..	1.30	..	..
36-36.9	..	..	..	..	..	1.59	..	..	..	..	..	1.50	..	..	..	..	..	..
37-37.9	..	..	..	..	..	1.65	..	..	..	..	..	1.55	..	..	..	..	..	..
38-38.9	..	..	..	..	..	1.71	..	..	..	..	..	1.60	..	..	..	..	..	..
39-39.9	..	..	..	..	..	1.77	..	..	..	..	..	1.65	..	..	..	..	..	..
40-40.9	..	..	..	..	..	1.83	..	..	..	..	..	..	..	..	..	..	..	..
41-41.9	..	..	..	..	..	1.89	..	..	..	..	..	..	..	..	..	..	..	..
42-42.9	..	..	..	..	..	1.95	..	..	..	..	..	..	..	..	..	..	..	..

"PETRECO"

A Typical "Petreco" Installation.

THE continuous flow system embodied in the "Petreco" Electrical Process for treating crude emulsions is practically free from the necessity for shutdowns from any cause, and requires minimum labor attendance.

Let the Official Oil Doctor tell you how to obtain more revenue from your "cut" production. There is no obligation.

PETROLEUM RECTIFYING COMPANY of CALIFORNIA

Security Title Insurance Bldg. 530 West 6th Street, Los Angeles, Calif.

Petroleum Bldg. Houston, Texas

	Jan. 8 1929
41 to 41.9 gravity	1.41
42 to 42.9 gravity	1.46
43 to 43.9 gravity	1.51
44 and above	1.56

WHEELER COUNTY
(Humble Oil and Refining Company and Magnolia Petroleum Company)

Below 30 gravity	.65
30 to 30.9 gravity	.72
31 to 31.9 gravity	.79
32 to 32.9 gravity	.86
33 to 33.9 gravity	.91
34 to 34.9 gravity	.96
35 to 35.9 gravity	1.01
36 to 36.9 gravity	1.06
37 to 37.9 gravity	1.11
38 to 38.9 gravity	1.16
39 to 39.9 gravity	1.21
40 to 40.9 gravity	1.26
41 to 41.9 gravity	1.31
42 to 42.9 gravity	1.36
43 to 43.9 gravity	1.41
44 and above	1.46

CARSON-HUTCHINSON COUNTIES
(Humble Oil and Refining Company, Magnolia Petroleum Company and Gulf Pipe Line Company)

Below 32 gravity	.69
32 to 32.9 gravity	.76
33 to 33.9 gravity	.81
34 to 34.9 gravity	.86
35 to 35.9 gravity	.91
36 to 36.9 gravity	.96
37 to 37.9 gravity	1.01
38 to 38.9 gravity	1.06
39 to 39.9 gravity	1.11
40 to 40.9 gravity	1.16
41 to 41.9 gravity	1.21
42 to 42.9 gravity	1.26
43 to 43.9 gravity	1.31
44 and above	1.36

WEST TEXAS
(Humble, Gulf, Magnolia, The Marland Company and Southern Crude Oil Purchasing Company)*

Crane-Upton, Crockett, Pecos and Winkler Counties, all grades .65

*Gulf does not post in Winkler County; Magnolia posts in Crane, Upton and Winkler Counties and that part of Glasscock not included in the Chalk field. The Marland Company posts only in Crane, Upton and Crockett Counties; Southern posts only in Crane, Upton and Winkler Counties.

(Magnolia Petroleum Company)

Mitchell County	$ .80
Howard-Glasscock County (shallow)	.80
Howard-Glasscock County (deep)	.65

Col-Tex Refining Company

Howard and Mitchell Counties	$ .80

WYOMING-MONTANA
Wyoming

Byron	1.33
Ferris	1.60
Elk Basin	1.48
Grass Creek	1.48
Rock Creek	1.33
Lost Soldier	.95
Lance Creek	1.48
Mule Creek	1.10
Notches	.65
Big Muddy	1.33
Osage	1.33
Hamilton Dome	.85
Pilot Butte	1.75
Torchlight-Greybull	1.33
Lander	.80
Simpson Ridge	.80
Rex Lake	1.10
South Casper Creek-Poison Spider	1.00

Salt Creek
Midwest Refining Company

29 to 29.9 gravity	1.14
30 to 30.9 gravity	1.16
31 to 31.9 gravity	1.18
32 to 32.9 gravity	1.20
33 to 33.9 gravity	1.22
34 to 34.9 gravity	1.24
35 to 35.9 gravity	1.26
36 to 36.9 gravity	1.28
37 and above	1.30

MONTANA

Sunburst	$1.65
Cat Creek	1.33
Lake Basin	2.20

	Jan. 8 1929
NEW MEXICO	
Artesia	1.08
Hogback	1.38
CANADA	
Oil Springs	2.07
Petrolia	2.00

NORTH LOUISIANA
(The Texas Company)

24 to 24.9 gravity	.76
25 to 25.9 gravity	.81
26 to 26.9 gravity	.86
27 to 27.9 gravity	.91
28 to 28.9 gravity	.96
29 to 29.9 gravity	1.01
30 to 30.9 gravity	1.06
31 to 31.9 gravity	1.11
32 to 32.9 gravity	1.16
33 to 33.9 gravity	1.19
34 to 34.9 gravity	1.22
35 to 35.9 gravity	1.25
36 to 36.9 gravity	1.28
37 to 37.9 gravity	1.31
38 to 38.9 gravity	1.34
39 to 39.9 gravity	1.37
40 to 40.9 gravity	1.40
41 to 41.9 gravity	1.43
42 to 42.9 gravity	1.46
43 to 43.9 gravity	1.49
44 to 44.9 gravity	1.52
45 to 45.9 gravity	1.55
46 to 46.9 gravity	1.58
47 to 47.9 gravity	1.61
48 to 48.9 gravity	1.64
49 to 49.9 gravity	1.67
50 to 50.9 gravity	1.70
51 to 51.9 gravity	1.73
52 and above	1.76

LOUISIANA-ARKANSAS
Homer, Haynesville, Caddo, El Dorado, De Soto and Crichton and Cotton Valley*
(Atlantic Oil Producing Company, Standard of Louisiana, Magnolia Petroleum Company and The Texas Company).

	Jan. 8 1929
27 to 27.9 gravity	.81
28 to 28.9 gravity	.88
29 to 29.9 gravity	.95
30 to 30.9 gravity	1.02
31 to 31.9 gravity	1.09
32 to 32.9 gravity	1.16
33 to 33.9 gravity	1.21
34 to 34.9 gravity	1.26
35 to 35.9 gravity	1.31
36 to 36.9 gravity	1.36
37 to 37.9 gravity	1.41
38 to 38.9 gravity	1.46
39 to 39.9 gravity	1.51
40 to 40.9 gravity	1.56
41 to 41.9 gravity	1.61
42 to 42.9 gravity	1.66
43 to 43.9 gravity	1.71
44 gravity and above	1.76

*Shreveport-Eldorado's postings stop at above 40 gravity.

**Below 36 gravity, the posting on Cotton Valley is 75 cents. From 36 to 52 and above the regular gravity schedule is followed.

STEPHENS
(All Companies)

Below 28 gravity	.75
28 to 28.9 gravity	.79
29 to 29.9 gravity	.83
30 to 30.9 gravity	.87
31 to 31.9 gravity	.91
32 gravity and above	.95

SMACKOVER
(All Companies)

Below 24 gravity	.75
24 and above	.90
Bellevue	1.25
Jennings	1.15
Vinton	1.30
Edgerly	1.30
Starks Dome	1.30
Urania	.85
Calion	.75

IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

American Petroleum Institute Figures (Barrels of 42 gallons)

	Week Ended Dec. 29	Week Ended Dec. 22
AT ATLANTIC COAST PORTS:		
Baltimore	185,000	175,000
Boston	71,000	69,000
New York	776,000	820,000
Philadelphia	225,000	271,000
Others	.....	70,000
Total	1,257,000	1,405,000
Daily Average	179,571	200,714
AT GULF COAST PORTS:		
Galveston District	.....	90,000
New Orleans and Baton Rouge	141,000	*218,000
Port Arthur and Sabine District	.....	73,000
Tampa	.....	.....
Total	141,000	381,000
Daily Average	20,143	54,429
AT ALL UNITED STATES PORTS:		
Total	1,398,000	1,786,000
Daily Average	199,714	255,143
Daily Average Four Weeks Ended	245,893	263,071

*Revised.

RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS

American Petroleum Institute Figures (Barrels of 42 gallons)

	Week Ended Dec. 29	Week Ended Dec. 22
AT ATLANTIC COAST PORTS:		
Baltimore	80,000	.....
Boston	.....	92,000
New York	240,000	66,000
Philadelphia	157,000	116,000
Others	.....	95,000
Total	477,000	369,000
Daily Average	68,143	52,714
AT GULF COAST PORTS—TOTAL	.....	.....
Daily Average	.....	.....
TOTAL—ATLANTIC AND GULF COAST PORTS	477,000	369,000
Daily Average	68,143	52,714
Daily Average Four Weeks Ended	57,929	59,571
Distribution of Total California Oil Receipts is as follows:		
Crude	.....	.....
Gasoline	477,000	274,000
Gas Oil	.....	.....
Kerosene	.....	95,000
Total	477,000	369,000

Conquer abrasive wear with Haynes Stellite

ALL friction develops heat—heat sufficient to soften even the best steels and reduce their resistance to abrasive wear.

Haynes Stellite is inherently hard. It retains its hardness at temperatures up to 1800°F. Steel softens long before this temperature is reached. This unique property of red hardness makes Haynes Stellite especially adaptable on parts subjected to extreme abrasive wear. It outlasts the best steels three to five times.

Whether it is an ounce of Haynes Stellite on the surface of a cam—or a pound on an oil well drilling tool—or as much as 100 pounds on the wearing faces of a brand new piece of equipment—regardless of the amount, Haynes Stellite pays for itself many times over in reduced maintenance costs and increased production.

Many manufacturers now supply Stellited parts for replacements. Your own welding department can also apply Haynes Stellite. Haynes Stellite booklets describe the process—sales representatives will show you how.

HAYNES STELLITE

—is an intrinsically hard cast metal.
—requires no heat treatment.
—has temper that is inherent and permanent.
—is not affected by heat up to 1800° F.
—is tougher at red heat than when it is cold.
—resists abrasion better than any other metal.
—is highly resistant to almost all acids and chemical compounds.
—has the untarnishable qualities of gold and platinum.
—takes a high silver-white polish and retains it.
—is non-magnetic and does not adhere to other metals.

Stelliting with HAYNES STELLITE

HAYNES STELLITE COMPANY

Unit of Union Carbide and Carbon Corporation

UCC

DISTRICT SALES OFFICES

Chicago—1949 Peoples Gas Bldg.
Cleveland—628 Keith Building
Detroit—4-240 Gen'l Motors Bldg.
Houston—6119 Harrisburg Blvd.
Los Angeles—1310 Santee Street
New York—30 East 42nd Street
San Francisco—114 Sansome St.
Tulsa—Exchange Nat. Bank Bldg.

General Offices—Kokomo, Indiana

Haynes Stellite welding rod is also available from any of the 28 District Sales Offices of Oxweld Acetylene Company.

PERMITS GRANTED FOR NEW WELLS

WEEKLY COMPARISON OF NEW WELLS

Following is a condensed table giving a comparison of permits or locations made for new wells during the the past year in Kansas, Oklahoma, Arkansas, Louisiana, Texas, California and the Mountain States:

	Week ending Jan. 5	Prev. ious Week	Total This Month	Total This Year	This Week Last Yr.	This Month 1928	T'tl to Date 1928	1928 Year Total
Arkansas	5	..	5	5	3	3	3	331
California	22	28	22	22	24	24	24	1,207
Louisiana	11	11	11	11	8	8	8	680
Kansas	11	8	11	11	18	18	18	1,032
Oklahoma	53	93	53	53	43	43	43	3,744
Texas	95	132	95	95	97	97	97	8,297
Total	197	272	197	197	193	193	193	15,291

TEXAS

ANDERSON COUNTY—Humble, Houston, Neches River 1, River Bed.

BROWN COUNTY—Humble, Cisco, Fuller 1, No. 353, G. B. Jennings sur, 150 ft from s and w lines. Woodley Pet. Co. & Young Bros. & Alexander Inc., Fort Worth, Hickman 19, No. 783, T. Benson sur, 633 ft e of No. 14. Indian Pet. Corp., Rawlins, Wyo., Boysen 1, No. 604, P. Mangle sur. Milham Corp., San Antonio, Rosser 7, No. 117, W. Q. Cross sur, 800 ft n of No. 5. Brock & Switzer, Brownwood, Dunn 1, S 203, I. Flores sur, 978 ft from ne and 150 ft from se line. Kone Prod. Co., Cisco, Hickman A22, No. 783, T. Benson sur, 550 ft from n and 950 ft from w line. Pandem Oil Corp., Wichita Falls, Westerman 12, S 150, R. B. Mitchell sur, 300 ft s of No. 9.

BASTROP COUNTY — Atlantic Oil Prod. Co., Dallas, Yost 2, A. Garcia sur, 220 ft from w and 1981 ft from n line.

BEXAR COUNTY—Indian Creek O. & G. Co., San Antonio, Wolfshohl 1, No. 5, J. A. Navarro sur, 180 ft w of center of e line.

CALLAHAN COUNTY—Moutray Oil Co., Abilene, Hatchett 7, S 29, D.&D. Asy. sur, 300 ft s of No. 2. Weigel, Russell & Callahan, Cisco, Linville 1, No. 777, W. G. Anderson sur, 150 ft from s and w lines. Texas Co., Wichita Falls, Hatchett 15, S 29, D.&D. Asy. sur, 300 ft se of No. 14. Humble O. & R. Co., Wichita Falls, Seale 3, S 129, B.B.B.&C. sur, 2109 ft from n and 150 ft from e line. De Lange & McKague, Fort Worth, Johnson 1, B 80, C.C.S.L sur, 150 ft from s and e lines. C. B. Holmes et al, Baird, Hickman 1, S 31, D.&D. Asy. sur, 450 ft from n and e lines.

COLEMAN COUNTY — J. E. Dunaway, Wichita Falls, Baugh 1, No. 494, P. Young sur, 150 ft from s and e lines. O. H. Shoup Jr., Colo. Springs, Colo., Gay 1, No. 630, M. A. Fisk sur, 150 ft s of center of n line. Midsun Oil Corp. & J. R. Foster, Coleman, Haas 1, S 71, B 1, G.H.&H. sur, 170 ft from n and 150 ft from w line. Continental Oil Co., Wichita Falls, Overall 11, G.H.&H. sur, 200 ft from s and w lines Shead, Simian & Jones, Brownwood, Mills 1, No. 752, J. Martin sur, 150 ft from n and w lines. Texas Pacific Coal & Oil Co., Ranger, Gay 1, No. 630, M. Fisk sur, 150 ft from n and e lines. Texas Co., Wichita Falls, Beatty 1, S 93, B.&S. sur, 1750 ft from w and 150 ft from n line.

CALDWELL COUNTY—J. S. Abercrombie Co., Houston, Moses 5, G. Hinds sur, 150 ft from w and 156 ft from s line; Moses 3, 300 ft e of No. 2. S. M. Oil Co., Houston, Linch 1, D. Benton sur, 300 ft from s and w lines.

COMANCHE COUNTY—Graham & Lash, Moran, Strickland 1, S 50, D.&D. Asy. sur, 150 ft from s and w lines. J. F. Carter, De Leon, Reed 1, S 56, B 2, H.&T.C. sur, 200 ft from n and e lines.

COOKE COUNTY—Thornton & Taubert et al, Houston, Dennis 3, H. Wilkinson sur, 450 ft from n and 150 ft from w line; Dennis 4, 300 ft n of No. 3; Dennis 5, 300 ft s of No. 2; Dennis 6, 300 ft s of No. 5; Dennis 7, 300 ft s of No. 6. C. M. Beckner, St. Jo, Grotte 1, E. T. RY. sur, 150 ft from n and w lines.

COLORADO COUNTY—Texas Co., Houston, Koeton 1, J. P. Morton sur, 400 ft from sw and 1860 ft from se line.

EASTLAND COUNTY—Arkansas Fuel Oil Co., Eastland, Lyerla 7, N. Ussury sur, 975 ft from s and 150 ft from w line. Y. L. Jones, Dallas, Gattis 1, S 123, B 3, H.&T.C. sur, 150 ft from s and w lines. Texas Pacific Coal & Oil Co., Ranger, Fee 4, R.C.S.L. sur.

GRAY COUNTY — Empire G. & F. Co., Wichita Falls, Jackson 1, S 185, B B2, H.&G.N. sur, 330 ft from n and e lines. R. R. Osborne, Pampa, Sallers 1, S 111, B 3, I.&G.N. sur, 330 ft from s and e lines.

GOLIAD COUNTY — Booth McCarson, Goliad, Murray 1, Goliad sur, 200 ft from w and 150 ft from s line.

GLASSCOCK COUNTY — Fred L. Kyle, Big Spring, Meeks 1, S 7, B 34, T.&P. sur, 2310 ft from e and 1650 ft from s line.

HOWARD COUNTY—Greene O. & R. Co., Fort Worth, Clay 6, S 128, B 29, W.&N.W. sur, 1285 ft from s and 230 ft from w line. Owen-Sloan Oil Co., Big Spring, Roberts 10, S 136, B 29, W.&N.W. sur, 660 ft s of No. 9. Marland Oil Co., Fort Worth, Chalk C2, S 140, B 29, W.&N.W. sur, 330 ft from n and 1650 ft from s line; Chalk C3, 660 ft from n and 2440 ft from e line; Clay 6, S 155, B 29, W.&N.W. sur, 330 ft from n and 990 ft from e line. Cranfill & Reynolds, Cisco, Kloh 1, S 3, B 2, T.&P. sur, 165 ft n of center of s line. F-H-E Oil Co., Sherman, Roberts B13, S 137, B 29, W.&N.W. sur, 50 ft w of No. B9; Roberts B14, 50 ft s of No. B11.

HARRIS COUNTY — T. G. Shaw, Fort Worth, Fitzsimmons E3, S 51, B 15, J. Hamilton sur, 620 ft from n and 20 ft from w line. Rio Bravo Oil Co., Houston, Settegast A A12, J. Kopman sur, 1410 ft from n and 650 ft from e line. Navarro Oil Co., Houston, Dooley 1, No. 96, J. Hamilton sur, 50 ft from s and w lines.

JEFFERSON COUNTY — Yount-Lee Oil Co., Beaumont, McFaddin 90, P. Humphreys sur, 695 ft from w and 495 ft from n line; McFaddin 91, 710 ft from w and 640 ft from n line; Gladys 74, B 55, J. A. Veatch sur, 32 ft from s and 28 ft from e line.

JONES COUNTY — Phillips Pet. Corp., Bartlesville, Okla., Vestal 3, S 18, B 19, T.&P. sur, 990 ft w of center of e line; Winters 6, S 19, B 19, T.&P. sur, 1639 ft from w and 1936 ft from s line. J. L. Tomberlin, Abilene, Horn 1, No. 271, G. W. Penny sur, 660 ft from w and 1980 ft from s line. Cosden & Co., Inc., et al, Fort Worth, Brown 1, S 4, B 19, T.&P. sur, 300 ft from e and 200 ft from s line.

JIM HOGG COUNTY—Randado Oil Corp., Oklahoma City, O'Meara 76, No. 291, B 19, 450 ft s of center of n line.

JACK COUNTY—Buttram Pet. Corp., Oklahoma City, Allar 1, S. M. Holderness sur, center.

LIBERTY COUNTY—Texas Co., Houston, Pickett 3, M. G. White sur, 350 ft from w and 400 ft from s line. Sun Oil Co., Beaumont, Mitchell 26, M. G. White sur, 150 ft n of No. 14; Mitchell 27, 150 ft n of No. 25; Mitchell 28, 200 ft n of No. 22.

LAVACA COUNTY — B. L. Laubenheim. Fort Worth, Johnston 1, Wm. Diggers sur, 450 ft from n and w lines.

MONTAGUE COUNTY—Bridwell Oil Co., Wichita Falls, Salmon A 9, F. Robertson sur, 1325 ft from w and 975 ft from n line. Pure Oil Co., Fort Worth, Maddox D 6, J. Chambliss sur, 200 ft from s and w lines.

McCULLOCH COUNTY — O. W. Greene, San Antonio, Shelton 1, S 155, H.&T.C. sur, 1160 ft n and 210 ft from w line. J. M. Hartsell, Brady, Steelhammer 1, No. 160, School, 990 ft from s and w lines.

MILAM COUNTY—W. A. Jones, Minerva, Banzhaf 2, T. J. Chambers sur, 150 ft from n and 550 ft from w line.

MATAGORDA COUNTY—Bay City Oil Co., Houston, Hawkins 1, D. McCarthy sur, se central part of lease.

SHACKELFORD COUNTY — Petroleum Prod. Co., Wichita Falls, Davis 1B, S 20, B 13, T.&P. sur, 150 ft from n and w lines. Roeser & Pendleton & Marland Oil Co., Fort Worth, Cook A5, S 83, E. T. Ry. sur, 415 ft w of No. 1. A. Crosby, Albany, Cockrell 5, S 6, L.A.L. sur; 6; 1.

STEPHENS COUNTY — Swensondale Oil Corp., Caddo, Swenson 34, No. 5, Bayland Asy. sur, 1200 ft s of No. 28. Phillips Pet. Corp., Bartlesville, Okla., Christie 1, S 27, B 6, T.&P. sur, 993 ft from n and w lines.

WICHITA COUNTY—Gulf Prod. Co., Fort Worth, Burnett 43, S 4, H.T.&B. sur, 1400 ft from n and 569 ft from w line. Humble O. & R. Co., Wichita Falls, Taylor 6, S 81, W.V.F.L. sur, 605 ft s of No. 4. Staley, Wynne & Co., Wichita Falls, Kemp & Kempner 11, B 82, W.V.F.L. sur, 300 ft s of No. 9. Comac Drilling Co., et al, Wichita Falls, Bishop 3, L. Netherly sur, 150 ft from n and e lines. Bridwell & Mayfield et al, Wichita Falls, Womack 4, No. 2, G.C.&S.F. sur, 605 ft from n and 150 ft from e line. United Prod. Co., Wichita Falls, Hodges 8A, H.&T.B. sur, 311 ft n of No. 6. Coppock & Coleman, Iowa Park, Kemp & Kempner 19, B 82, H.T.&B. sur, 200 ft from n and 450 ft from w line. Hammon & Garrett, Wichita Falls, McCarty D 6, W. R. Eaves sur, 750 ft from n and 150 ft from e line; Mitchell 6, J. T. Lewis sur, 790 ft from n and 150 ft from w line; McCarty D 5, W. R. Eaves sur, 750 ft from n and 150 ft from w line. Comac Drilling Co., Wichita Falls, Morgan 1, E. Stanley sur, 150 ft from s and e lines.

WILBARGER COUNTY—Lewis Prod. Co., Dallas, Waggoner 3, S 18, B 4, H.&T.C. sur, 815 ft from n and 150 ft from e line; Waggoner 4, 1145 ft from n and 150 ft from e line; Waggoner 5, 150 ft from e and 1175 t from s line; Waggoner 6, 150 ft from e and 515 ft from n line.

LOUISIANA

BOSSIER PARISH—Palmer Corp. of La., Shreveport, Hodges B-12, 25-16n-12w, 4620 ft n and 1320 ft w of SE C.

CADDO PARISH—Simplex Oil Co., Shreveport,, Youree-Randolph 7, 13-20n-15w, 660 ft n and 660 ft w of Center.

CALCASIEU PARISH — Marrs McLean, Beaumont, Texas, F. H. Gray estate 12, 33-10s-12w, 540 ft and 40 ft w of Center.

CAMERON PARISH—John D. Dickson, Lake Charles, John B. Duhon 1, 26-12s-10w, 410 ft S and 30 ft e of NW C. Siess, Green & Sutton, Lake Charles, Sauner 1, 28-12s-10w, 1502 ft n and 1345 ft e of SW C.

MOREHOUSE PARISH—Natural Gas Producing Co. of La., Bastrop, Tensas Delta 14, 4-22n-4e, 1980 ft s and 660 ft e of NW C.

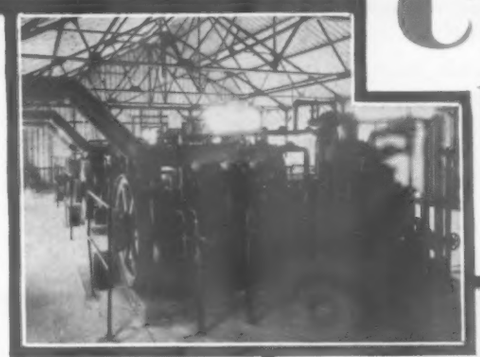
OUACHITA PARISH—Palmer Corp. of La., Shreveport, Fee 5, 24-19n-4e, 4567 ft w and 1980 ft s of NE C.

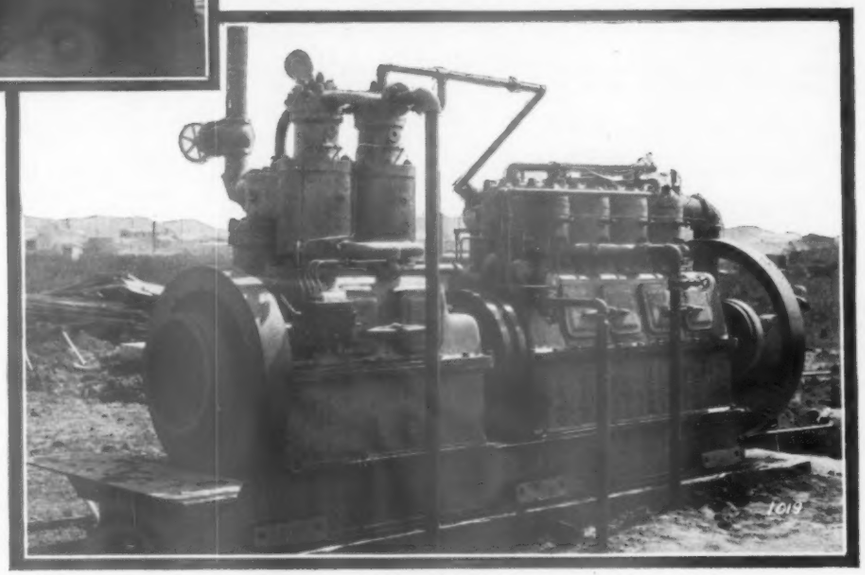
RICHLAND PARISH—Ouachita Natl. Gas Co., Monroe, C. G. Pardue 5, 5-15n-6e, 660 ft s and 660 ft e of NW C.

TANGIPAHOA PARISH—Joan Dev. Co., Hammond, Lake Superior Piling Co. 1, St. Helene Meridian, 20-5s-9e, 540 ft e and 675 ft n of SW C.

UNION PARISH—United Carbon Co., Mon-

CLARK VERTICAL





The Semi-Portable Compressor Unit that stands up in Permanent Service

The CLARK "Vertical" is an easily transported unit which can be moved in and put into operation in the shortest possible time and at minimum expense—yet it is sufficiently rugged and durable for efficient and economical performance over a long period of time.

Wherever quick set-up and small installation cost are important, the "Vertical" is unequalled. It is compact—15′x53″x85″ high—weighs but 15,900 pounds. Can be set on timbers if desired. Operators are using it to apply air or gas lift while the well is sufficiently headed, and for testing wells for their response to air or gas lift.

Engine is 4-cylinder, vertical, 75 H.P., burning natural gas, 4-cycle. Compressor has two vertical cylinders, each 2-stage. Capacity 330,000 cu. ft. in 24 hours, at 0 pounds intake to 400 pounds discharge, with starting pressure of 1,000 pounds. Air or friction starters are optional.

Get complete information from: Clark Bros. Company, Olean, N. Y. Branches and Warehouses, 125 W. First St., Tulsa; McCamey and Sweetwater, Texas; and Artesia, N. M. Smith, Booth, Usher Company, 228 S. Central Ave., Los Angeles, and 50 Fremont St., San Francisco.

Clark Bros. Co. OLEAN N.Y.

CLARK

roe, E. Nichols 1, 6-20n-3e, 660 ft n and 660 ft e of Center NW.

WEBSTER PARISH—Magnolia Pet. Co., Shreveport, G. Denman 1, 1-22n-11w, 330 ft s and 330 ft e of NW C.

KANSAS

BUTLER COUNTY—Dixie Oil Co., Marshall 6, sw ne nw, 10-27-6e; Allisson & Fitzwilliams, McGinnis 4, se ne ne, 9-27-6e; Davie & Hazlett, Lewis 10, sw ne sw, 3-27-6e; Empire O. & R. Co., Hutchinson 2, ne nw, 34-27-5e; Empire O. & G. Co., Linnerson 2, sw ne sw, 34-27-5e; Patter et al, Marshall, nw se sw, 11-27-5e.

ELK COUNTY—Mann et al, Shrader 2, sw nw se, 12-31-8e.

GREENWOOD COUNTY — Syndicate Oil Co. & Phillips Pet. Co., Edwards 2, sw nw ne, 35-23-11e.

MARION COUNTY—Fred Franks, Propp 1, C sw se, 8-19-4e.

MORRIS COUNTY—Hiatt et al, Smith 1, nw se, 35-15-5e.

WOODSON COUNTY—Churchill & Wasson, Southwick 1, nw se, 31-23-16e.

OKLAHOMA

CARTER COUNTY — Schermerhorn et al, Joliff 2, nw ne ne nw, 24-5s-1e; Magnolia Pet. Co., L. Johnson 3, nw sw, 33-1s-3w. The Texas Co., Eaves 2, sw cor 24-1s-3w.

COTTON COUNTY—Shasta Oil Co., Chambers 3, ne sw nw, 2-2s-10w.

CREEK COUNTY—Shaffer Oil & Ref. Co., Cain 5, se ne se, 18-17-7e. Bengal Oil Co., Tiger 10, sw nw sw, 17-17-7e. Mid Continent Pet. Co., Stewart 9, ne nw se, 15-17-7e.

KAY COUNTY—Marland Prod. Co., Shimp 1, c ne ne, 18-29-1e.

KIOWA COUNTY—Ford, Foster & Duncan, Finney 1, nw sw sw sw, 8-6n-16w.

LINCOLN COUNTY—Mid Continent Pet. Co., Tipton 1, se ne nw, 13-15-5e. Texas Pacific Coal & Oil Co., Seabo 1, nw, 19-16-5e.

LOGAN COUNTY—Shell Pet. Corp., Shaffer 2, ne se ne, 19-19-4w.

MUSKOGEE COUNTY—Durham & Smith, Wilkins 1, ne nw, 19-13-19e. Mills & Hall, Brown 1, nw se ne, 19-13-19e. Sioux Oil Co., Jordan 3, nw se se se, 14-13-18e. J. L. Slusher, Heckman 1 nw, 2. 13-19e.

OKMULGEE COUNTY—R. E. Garnett, Sneed 1, sw se nw, 9-14-13e. J. K. Gardner et al, Fixico 2, csl nw se, 9-14-13e. Becker & Hutchinson, Berryhill 2, ne nw nw, 8-14-13e. Unger Brothers, Harrison 8, c se sw, 24-15-14e.

OSAGE COUNTY—Phillips Pet. Co., No. 17, c ne, 12-27-5e; No. 17, c se, 2-27-5e; No. 17, nw sw se, 21-25-12e. Mid-Continent Oil Co., No. 3, nw sw sw, 24-21-8e. Clint Moore Estate No. 7, nw ne nw nw, 16-21-9e.

PONTOTOC COUNTY—W. R. Ramsey, Millner 6, sw se se, 18-5-8e.

POTTAWATOMIE COUNTY—Gypsy Oil Co., Miller 5, ne se se, 18-8-5e. Independent O. & G. Co., Harding 5, nw se nw, 18-8-5e. Skelly Oil Co. & Margay Oil Co., Linger 2, nw ne, 18-8-5e. Magnolia Pet. Co., Brandenburg 2, ne nw nw, 18-7-5e. T. B. Slick & Maud Oil & Gas Co., Davis 2, nw sw ne, 18-7-5e. T. B. Slick & Maud Oil & Gas Co., Nesbit 1, se ne nw, 18-7-5e; Laurel Oil & Gas Co., Billington 3, sw ne nw, 18-8-5e; Billington 2, ne nw, 18-8-5e. Amerada Pet. Corp. & Barnsdall Oil Co., Wallace 2, nw sw sw, 17-8-5e. The Texas Co., Calvin 5, sw se, 7-8-5e. Amerada Pet. Corp., Hallum 4, se ne se, 1-8-4e. Independent O. & G. Co., Carson 2, ne nw nw, 23-7-4e. Interocean Oil Co., McGee 3 (owd), se ne se, 23-7-4e. Superior Oil Corp., Cloud 2, nw sw sw, 13-7-4e. Pure Oil Co., Lindley 5, sw nw se, 18-8-5e; Lindley 6, nw sw se, 18-8-5e. Sinclair O. & G. Co., Blandon 5, (owd) sw nw sw, 24-7-4e; Bruno 1 (owd) cnl ne, 26-7-4e; Brandenburg 1, se sw sw, 7-7-5e; Nesbit 3, nw ne nw, 18-7-5e; Nesbit 2, se nw, 18-7-5e.

SEMINOLE COUNTY—Louisiana O. & R. Co., Statler 2, (owd) sw se sw, 7-5-8e. Carter Oil Co., Eleck 1, e sw se, 23-7-6e. Magnolia Pet. Co., Fee 1, sw nw nw, 11-8-5e. The Texas Co., Dindy 1, sw ne sw, 24-7-6e.

STEPHENS COUNTY—Harry Hanbury, Taliaferro 8, nw sw sw, 27-1s-8w. Atlantic Oil Producing Co., Taylor 2, sw nw nw, 12-1s-4w.

CALIFORNIA

BELRIDGE—Berry Oil Co., No. 95, 30-28-21. Union Oil Co., King 6, 30-28-21; No. 7, 30-28-21.

BREA-OLINDA—Shell Co., Orange 18, 2-3-10.

ELWOOD—Barnsdall Oil Co., Luton-Bell 5, 15-4-29. Cady Oil Co., Bishop 1, 23-4-29.

KERN COUNTY—Richfield Oil Co., Redding 1, 36-27-23.

KINGS COUNTY—Milham Explo. Co., No. 1, 34-21-17. Standard Oil Co., No. 81, 11-22-17.

LONG BEACH — Graham-Loftus Oil Co., Dodge 1, 24-4-13.

LOS ANGELES COUNTY—Smith Pet. Co., Durand 1, 20-3-14.

MERCED COUNTY—Appelgate and Renshaw No. 2, 24-6-10.

MIDWAY—C. C. M. O. Oil Co., No. 5, 7-32-23. Standard Oil Co., No. 91, 29-31-24.

MT. POSO—The Texas Co., Glide 2-4, 15-27-28.

SANTA FE SPRINGS—Union Oil Co., Bell 29, 31-2-11. Standard Oil Co., Walker Community 19, 6-3-11; Walker Community 20, 6-3-11.

SEAL BEACH—Associated Oil Co., Bryant 12, 11-5-12; Bryant 13, 11-5-12.

VENTURA—General Pet. Corp., Bayard 16, 21-3-23. Associated Oil Co., Lloyd 59, 27-3-23.

ARKANSAS

NEVADA COUNTY—Humble O. & R. Co., J. Haynie 2, 660 E 150 N center Section 6-14-20.

UNION COUNTY—Arkansas Drilling Co., E. F. Gregory 3, NW SW 10-17-14. C. E. Bell et al, Terrell 1, NE SW 27-18-14. Ohio Oil Co., C. L. Frazier 2, SW SW 6-17-13. Phillips Pet. Co., D. N. Johnson 7, SW SE, 34-15-15.

Kevin-Sunburst Producer Making 1000 Barrels

Great Falls, Mont. — The old Kevin-Sunburst field is again the center of Montana operators' interest this week with the development into a gusher of the Campbell interests' well, Morton 2, SE NE Section 13-34-2w. This well appeared to be good for 15 barrels or so of oil when it was drilled in two weeks ago. It developed into a 1000-barrel gusher later, and is now flowing through two three-inch lines at the rate of about 750 barrels per day. There is no water with the oil and there has been no decline in gas pressure. There have been several dry holes drilled in this part of the field, but the center of Section 13 has never been thoroughly tested previously. Several offsets to the new producer will be drilled immediately.

Continental Buys Lease Interest at Salt Creek

Casper, Wyo.—Announcement has been made here of the purchase of the Hay Syndicate holdings in the Salt Creek field by the Continental Oil Company for $50,000 cash. The Syndicate has a working interest on 80 acres in Section 32-40-78 on which there are eight wells and a working interest in 80 acres in Section 8-39-78 on which there are two producing wells. Both leases have been operated by the Continental Oil Company. Transfer of interest has been approved by the Department of the Interior and the proceeds of the sale have been distributed to the 30 or more members of the Syndicate which is headed by the Rock Springs banker, John W. Hay.

Cat Creek Royalty Oil Gets $1.01 Premium

Casper, Wyo.—The Yale Oil Corporation of Miles City, Montana, has been granted the contract for the government royalty oil in the Cat Creek field. The Yale bid $1.01 above the posted field price; other bids submitted were the Associated Gas & Oil Company which bid 76 cents bonus, the Century Oil Company of Detroit at 72 cents bonus, Westland Oils, Inc., of Salt Lake City, a 36 cents bonus, and the Arro Oil & Refining Company of Lewistown at 92 cents bonus.

All bids were submitted on the posted field prices in the states of Oklahoma, Kansas, and Wyoming, whichever is the highest, for oil of 39 gravity in the Cat Creek field runs from 49 to 51; as the posted price for Cat Creek crude is now $1.51 per barrel, and the new price for the government's share of oil carries a bonus of $1.01 per barrel, the government will be receiving $2.52 if the bid is accepted.

The daily production of the Cat Creek field is around 1500 barrels of which the government's share is about 75 barrels per day. Under the new contract the government will be receiving about $75 per day more than under the old contract with the Lewistown Oil & Refining Company.

Washington, D. C.—Suit for recovery of profits alleged to have wrongfully accrued to the Sinclair Crude Oil Purchasing Company and the Mammoth Oil Company was filed by the Department of Justice in the Federal District Court at Wilmington, it is announced by the Department of Justice. The United States alleges that the Sinclair Crude Oil Purchasing Company and the Mammoth Oil Company, together with Albert B. Fall, former Secretary of the Interior; Harry F. Sinclair and the Sinclair Pipe Line Company, conspired to defraud the United States. Fall, Sinclair and the Sinclair Pipe Line Company were not named as defendants in the suit because they are not inhabitants of the district in which the suit is brought.

Ogden, Utah.—Walter B. Scoville has withdrawn from the firm of Scoville Brothers, and henceforth will conduct his oil field operations alone under the firm name, Walter B. Scoville Company. His four brothers will continue their operations in the South Baxter Basin field in southwestern Wyoming as the Tower Petroleum Company and the Highland Petroleum Company. Mr. Scoville is credited with having brought in the first commercial oil well in the LaBarge field in southwestern Wyoming.

Kemmerer, Wyo.—Most of the operations in southwestern Wyoming have been shut down until spring, the winter having become too severe to continue. Both the LaBarge and the Evanston districts have felt the pinch of subzero weather and all of its attendant difficulties.

Conservation of the nation's petroleum supply presents many problems that are extremely difficult of solution. But there is one important means of conserving petroleum that is simple, certain and profitable—namely the recovering of ALL oil from "B. S." and "tank bottoms." Those who are still allowing their oil to be discarded in emulsions should inquire about TRET-O-LITE.

Tret-O-lite

Reg. U. S. Pat. Off.

W. S. BARNICKEL & CO.
Webster Groves, Mo.

WILDCATS FROM ALL SECTIONS

WEST TEXAS

Completions

Company, Well and Location		Initial Production Bbls.	Depth
EDWARDS COUNTY—			
Gale Oil Co., Jernigan 1		*	4110
IRION COUNTY—			
Signal Oil Co., Sugg 1		*	3155
PECOS COUNTY—			
McCarty Oil Co., Bennett 1		*	1400
Yates Ranch Oil Co., Yates 1		*	1648

ANDREWS COUNTY—Deep Rock Oil Co.'s Hostetter 1, dr 1640 ft. Mid-Continent Pet. Corp.'s Fisher 1, lcn.

BORDEN COUNTY — Condor Pet. Co.'s Hall 1, elev 2601 ft, top salt 1235 ft, top lime 2969 ft, dr 3710 ft. Greene O. & R. Co.'s Slaughter 1, dk.

BREWSTER COUNTY—Ed. W. Bateman & Co.'s Neville Ranch 1, elev 3950 ft, fsh 1070 ft. Brewster Oil Co.'s Fee 1, machine. C. Williams et al's Poncey 1, sd 500 ft.

COKE COUNTY—Gates & Dennis' Mims 1, sd 1465 ft. Lipan Oil Co.'s Rawlings 1, sd 2840 ft. Louisiana Oil Ref. Corp.'s Powers 1, elev 2040 ft, ur 3525 ft. Mid-Kansas O. & G. Co.'s Lackey 1, ur cas 2890 ft.

CONCHO COUNTY—Lloyd Jones et al's Jones 1, sd 660 ft. Exploration Co.'s Hartgrove, machine.

CRANE COUNTY—C. C. Duffey et al's Cowden 4, rig. Gulf's Waddell 6, dr 170 ft.

CROCKETT COUNTY—Barbara Oil Co.'s Cox 1, elev 2051 ft, top lime 1082 ft, sd hfw 1290 ft. W. W. Donnelly et al's Shannon 1, (Sec. 9), elev 2486 ft, sd making gas, td 1759 ft. Donnelly-W. A. Moncrief et al's Todd 1, (Sec. 35), sp and sd. Todd 2, lcn. Ed. G. Lewis and W. T. Daniels' Pecos River bed 1, sp and sd. J. D. Wheeler et al's State Fee 1, sd 410 ft. F. P. Zoch-W. A. Moncrief et al's Tippett 1, elev 2317 ft, top salt 640 ft, making 2½ million ft sweet gas 1153-70 ft, dr 1260 ft.

CULBERSON COUNTY — Deep Rock Oil Co. et al's Seay 2, set cas 1178 ft. J. H. Hickey et al's Finley 1, sd 1660 ft. Scott & Dittman's Miller 1, sd 1765 ft. West Texas Oil & Exploration Co.'s McGregor 1, sd 385 ft.

JEFF DAVIS COUNTY—Sam F. Means et al's J. Z. Means 1, co 3300 ft.

DAWSON COUNTY—Magnolia Pet. Co.'s Jeter 1, elev 2889 ft, top salt 1640 ft, top lime 3560 ft, dr hard gray lime 3720 ft.

EDWARDS COUNTY—McMan O. & G. Co.'s Schreiner 1, fsh cas 3995 ft.

EL PASO COUNTY—C. E. Sillix et al's Malone 1, sd 1010 ft.

FISHER COUNTY—Bickerstaff et al's McWhirter 1, dr 1910 ft. Cranfill & Reynolds & Sun Oil Co.'s Brown 1, dr 490 ft; J. R. Fleming 1, lcn; B. F. Willingham 2, lcn. J. B. Dunigan et al's Henry 1, sd 1475 ft. Hucony Gas Co.'s Marberry 1, elev 1876 ft, sd 2840 ft. Landreth Prod. Corp.'s T. B. Cooper 1, lcn. Rainey et al's Marberry 2, sd 3507 ft. I. E. Thompson et al's Newman 1, dr 1865 ft. Texas Co. and Phillips Pet. Co.'s W. H. Hail 1, lcn.

GAINES COUNTY—Pure Oil Co.'s Williamson 1, dr 2175 ft.

GARZA COUNTY—Emerald Oil Co.'s Boren 3, pumping water, td 4801 ft.

GLASSCOCK COUNTY—Chas. Daniels et al's Meek 1, dk. Gibson-Johnson et al's Mann 1, dr 910 ft. Meriwether Oil Co.'s McDowell 2, elev 2517 ft, top salt 970 ft, dr 1920 ft. Bob Penn et al's Hughes 1, elev 2733 ft, fsh 585 ft. White Eagle O. & R. Co.'s Dunbar 1, dr 595 ft. World Oil Co.'s McDowell 1-C, elev 2530 ft, sp and sd.

TOM GREEN COUNTY—F. P. Green et al's Fee 1, dr 1600 ft.

HOWARD COUNTY—Andrews et al's Neal 1, elev 2731 ft, top salt 2315 ft, top lime 3150 ft, dr 3570 ft. Greene O. & R. Co.'s Furrh 1, elev 2277 ft, top salt 1255 ft, top lime 2097 ft, dr 3300 ft. Group One Oil Corp.'s Quinn 1, elev 2499 ft, top salt 1070 ft, top lime 3103 ft, sd hfw 3750 ft. L. C. Harrison et al's Dodge 1, elev 2321 ft, top lime 1830 ft, plug back from 3257 to 3000 ft for shot. Phillips Pet. Co.'s Thomas 1, elev 2591 ft, top salt 1170 ft, top lime 3030 ft, showing water, dr 3480 ft.

HUDSPETH COUNTY — The California Co.'s University 1, elev 5833 ft, bad hole 270 ft. Western States Oil Co.'s Gardner-Mosely 1, dr 3160 ft; Moore 1, dr 2760 ft.

IRION COUNTY—Furhman Pet. Corp.'s Sugg 1, rig. Kimbrough et al's Nutt 1, sd 1420 ft. Kimbrough & Kinchbaugh's Tankersley 1, sp and sd. Kingwood Oil Co.'s Sugg 1, elev 2334 ft, dr 4620 ft. Mertzon Interests' H. Horney 1, lcn. Signal Oil Co.'s Sugg 2, dk. Webb et al's Nutt 1, 2510 ft.

JONES COUNTY—E. P. Campbell et al's Herndon 2, dr 415 ft. McNeeley et al's Bland 1, sp and sd. Mid-Sun Oil Corp.'s Hoehn 1, dr 1290 ft. Milt Richardson et al's Martin 1, sd 900 ft. Roeser-Pendleton, Inc. et al's Castle 1, dr 400 ft. Sedwick O. & G. Co.'s Routh 1, rig. Tomberlin et al's Horn 1, sp and sd. Woods & Williams' Parr 1, sd 2370 ft.

LOVING COUNTY—Lockhart & Co.'s H. L. Lepp 1, lcn.

LYNN COUNTY—Geo. B. McCamey et al's Edwards 1, sp and sd. H. F. Miller et al's W. H. May 1, sp and sd.

MENARD COUNTY—Sorrels & Jackson's Wilhelm 1, dr 515 ft.

MIDLAND COUNTY—Shoup et al's Park's 1, elev 2871 ft, top salt 1740 ft, sd 4980 ft.

MITCHELL COUNTY—E. P. Campbell et al's Pond 1, dr 2180 ft. Simms Oil Co.'s Ellwood 1, lcn. Teas & Wheeler's Radford 1, elev 2223 ft, top lime 1365 ft, fsh 3335 ft.

NOLAN COUNTY—T. G. Bradstreet et al's Kuteman 1, dk. Herbert Oil Co.'s Pepper 1, elev 2242 ft, sd 3645 ft. C. M. Root Drilling Co.'s Simpson 1, dr 1535 ft. White Eagle O. & R. Co.'s Allyn 1, elev 2158 ft, set cas 2485 ft.

PECOS COUNTY—Alexander-Lyles et al's Sellman 1, elev 2672 ft, top salt 814 ft, top lime 1602 ft, sd hfw and show gas and oil, td 1655 ft. Geo. H. Anderson et al's University 1, elev 2801 ft, top salt 1030 ft, top lime 1715 ft or 1760 ft, re-set cas and sd, td 1961 ft. Atlantic Oil Prod. Co.'s Sellman-White 1, dr 800 ft. Benedum-Trees et al's Corder 1-A, top salt 1840 ft, sd 2575 ft. M. H. Black et al's Pecos Valley Oil Co. Fee 1, lcn. M. Z. Dibble et al's Bonebrake 1, elev 2555 ft, top salt 1874 ft, sd 2004 ft. Doran & McGee et al's Pecos Valley Oil Co. Fee 1, lcn. McCarty Oil Co.'s A. A. Gray 1, lcn. Mauch & Krogen's Holmes 1, elev 2352 ft, top salt 535 ft, sd 1010 ft. Phillips Pet. Co.'s J. L. Nutt 2, dr 575 ft. Schumaker et al's Williams 1, dr 405 ft. Southern Crude Oil Pur. Co.'s Scharbauer 1, elev 2680 ft, fsh 3380 ft. Stein & McGee et al's Louis Peterson 1, lcn. Talbot & Dittman's Unsicker 1, set cas 708 ft. Transcontinental Oil Co.'s University 1, elev 2552 ft, top lime 1035 ft, dr cement

Drilling Location Reached by Bridge

Houston. — The Jefferson Lake Oil has started a new deep test, Lake Peigneur 1, on a location adjacent to the Jefferson Island Salt Dome, north-northeast of the dome, in Lake Peigneur. This area is in Iberia Parish, Louisiana.

The accompanying picture shows Lake Peigneur 1. The tram-way is more than 1500 feet long, and required piling of from 30 to 60 foot lengths. The derrick is built on 85-foot piling, while the two 75-horsepower boilers are on 75-foot piling.

Lake Peigneur is about one mile wide and a little over two miles long, lying north, west and southwest of the Jefferson Island salt dome; and the Jefferson Lake Oil Company has a lease on it from the State of Louisiana.

The first string of casing, 18⅝-inch, has been set at 102 feet, and the next string of 13⅜-inch, will be set around 800 feet.

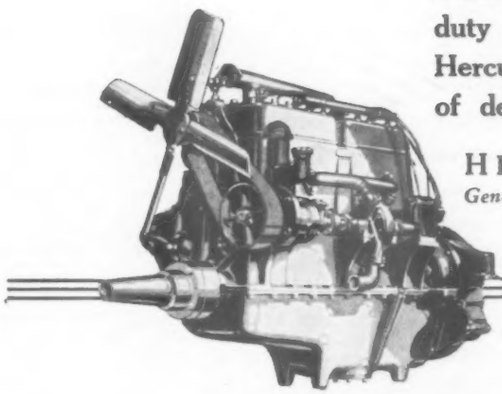
The company will make a deep test here, having made the location at this particular point on account of a large bubbling gas pool which lies just a few hundred feet away, and which covers a space about 100 feet in diameter.

POWER *for 24 hour a day Pumps*

HOUR after hour, day after day, a Hercules TXO Power Unit pumps water from twelve miles away to the rotary drills of T. B. Slick, Inc. in the Seminole, Okla. oil-fields.

Operating on natural gas at 840 R.P.M. it drives a Worthington Duplex power pump. Under 800 pounds pressure the water is forced through 7 miles of 3-inch pipe, 1½ miles of 4-inch pipe and 3½ miles of 5 3/16-inch pipe. Three thousand barrels are delivered every 24 hours.

Oil-field operations especially demand the rugged, heavy-duty power that Hercules Engines provide. The sturdy Hercules construction, combined with absolute simplicity of design, assures long, low-cost, trouble-free operation.



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THE CONTINENTAL SUPPLY COMPANY
Engine and Parts Distributor in the Mid-Continent Field

HERCULES ENGINES

Say you saw it in The OIL WEEKLY

plug 4128 ft. Trees Oil Co.'s J. C. Trees 1, lcn. World Oil Co.'s Kloh 1, elev 2810 ft, sd 3105 ft.

PRESIDIO COUNTY—L. C. Brite Prod. Co.'s Brite 1, sd 4152 ft. Eastland Oil Co. et al's Tootle 1, sp and sd. C. E. Miller-Delram-Empire & Phillips Pet. Co.'s Tootle 1, show gas 1270 ft, dr 1280 ft.

REAGAN COUNTY—The California Co.'s University 5, rig.

REEVES COUNTY—E. W. Brooks et al's Eddins 1, elev 2719 ft, top salt 1622 ft, top gray lime 3216 ft, sd 5658 ft. D. P. Davis et al's Kinney 1, sp and sd. Exploration Co.'s Kinney 1, elev 2847 ft, sd 2900 ft. Dr. Kitsoe et al's Kloh 1, elev 2786 ft, set cas 1010 ft. Bob Penn et al's Bowles 1, sp. Lee O. White et al's Kloh 1, rig.

RUNNELS COUNTY—G. W. Boyce et al's Lange 1, dr 445 ft. Gene Mays et al (was Foster's) Currie 1, sp and sd. Ira Nourse-Tilton et al's Cramer 1, dr 2185 ft. Union Oil Co.'s Allen 1, dr 2010 ft. Vacuum Oil Co. et al's Brevard 1, sd for cas 2224 ft.

SCHLEICHER COUNTY—Ft. McKavitt Oil Co.'s Tisdale 1, dr 705 ft. Interstate Prod. Co.'s Whitten 1, dk.

SCURRY COUNTY—Pender O. & G. Co.'s Davis 1, elev 2208 ft, top salt 445 ft, sd 1120 ft.

STERLING COUNTY—Foster & Gracey Oil Co.'s Foster 1, elev 2260 ft, dr 1710 ft.

STONEWALL COUNTY—Sun Oil Co.'s Rayner 1, elev 1818 ft, top lime 1500 ft, ur 3560 ft.

SUTTON COUNTY — Phillips Pet. Co.'s Cawthorn 1, dr 495 ft; Holman 1, sd 5890 ft. Southern Crude Oil Pur. Co.'s Allison 1, rig.

TAYLOR COUNTY—Burnham et al's Amyx 1, dr 1785 ft. Grisham-Hunter Corp.'s Campbell 1, dk. Hurley Oil Co.'s Payne 1, top of lime 2473 ft, dr 2870 ft. Mid-Kansas O. & G. Co.'s Parramore 1, dr 2105 ft. Mid-Continent Pet. Corp.'s Taylor 1, dr 1395 ft.

TERRELL COUNTY—Big Bend Oil Co.'s Bassett 1, sp and sd. Mrs. J. B. McPhee et al's Belt 1, sp and sd. Milham Corp.'s Bassett 1, elev 2270 ft, sd 4430 ft. Keck-Pecos Oil Trust's Hamilton 1, sd 1749 ft.

TERRY COUNTY—Superior Oil Prod. Co.'s Brownfield 1, elev 3205 ft, top lime 4565 ft, dr 4805 ft.

VAL VERDE COUNTY—Dyer Bros. et al's W. E. Wilson 1, sd 2160 ft. Producers Oil Co. et al's Everett 1, sd 1570 ft. Val Vert Oil Corp.'s Bassett 1-A, dr 2400 ft.

WARD COUNTY—E. B. Lovelace et al's Redman 1, sp and sd. Prairie O. & G. Co.'s Sealy 1, elev 2666 ft, top salt 1073 ft, top lime 3110 ft, plug back from 3505 ft to make gasser. Rector Oil Co.'s Johnson 1, elev 2438 ft, top salt 745 ft, top lime 2010 ft, sr 2501 ft. Talbot-Dittman et al's C. C. Dorr 1, elev 2430 ft, top salt 745 ft, dr 2400 ft.

WINKLER COUNTY—Amerada Pet. Corp.'s Daugherty 2, elev 2891 ft, top lime 2654 ft, tested 65 million ft gas with spray oil and water, td 3110 ft; Daugherty 3, dr 2650 ft. Barnsdall Oil Co.'s Morton 1, elev 2730 ft, top lime 2870 ft, sd showing sulphur water 3128 ft; Morton 2, sd 1095 ft; Morton 3, dk. Empire Gas & Fuel Co.'s Daugherty 2, elev 2889 ft, top lime 2690 ft, tested 5 million ft gas and flowed 127 bbls clean oil 12 hours, 3140-45 ft; Daugherty 3, elev 2885 ft, top lime 2774 ft, rig burned, td 2846 ft; Daugherty 1-B, elev 2909 ft, top lime 2821 ft, dr 2960 ft. Gulf Prod. Co.'s O'Brein 2, elev 2719 ft, top salt 2077 ft, top lime 2723 ft, stdz 2798 ft; O'Brien 3, elev 2721 ft, top salt 2420 ft, top lime 2700 ft, testing oil pay 2890-2900 ft. Magnolia Pet. Co.'s Scarborough 1, elev. 2953 ft, top salt 1122 ft, top lime 2770 ft, swabbing 60 bbls oil daily 2862-2975 ft. Marland Prod. Co.'s Morton 1, elev 2722 ft, top lime 2651 ft, showing oil and gas, fsh 2830 ft; Morton 2, cem cas 405 ft. Prairie O. & G. Co.'s Daugherty 1, elev 2889 ft, top lime 2707 ft, gas blowout 3020 ft; Daugherty 2, cem cas 2663 ft; Morton 1, elev 2731 ft, top salt 1540 ft, top lime 2765 to 2815 ft, dr 2890 ft. Shell Pet. Corp. & Danciger O. & R. Co.'s Daugherty 1, elev 2897 ft, top lime 2684 ft, dr 2755 ft; Daugherty 2, elev 2903 ft, top lime 2742 ft, sd 2935 ft. Simms Oil Co. & Southwest Oil Production Co.'s Sealy 1, elev 2731 ft, top salt 2070 ft, top lime 2661 ft, cem cas 2679 ft. Texas-Canadian Oil Co.'s Kloh 1, lcn. Warner-Quinlan Co.'s J. D. Leck 1, elev 2901 ft, top lime 2665 ft, cem cas 2671 ft. L. H. Wentz Oil Interests' Morton 1, elev 2729 ft, top salt 1706 ft, top lime 2672 ft, sd flowing 30 bbls oil per hour 2842-3005 ft.

YOAKUM COUNTY — Bert Weekly Oil Corp. et al's R. L. Knight 1, dk.

ABBREVIATIONS

NOTE—The following is the explanation of abreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million feet of gas; abn—abandoned; bbls—barrels; b.s.—basic sediment; cas casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in—inches; lcn—location; m—milling; n, s, e, w—north, south, east, west; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudding; sr—straight reaming; std—standardizing; sw—salt water; td—total depth; ur—underreaming; wo—workover; wosr—waiting on standard rig.

EAST TEXAS

BOWIE COUNTY—Hooks O. & G. Co.'s Rosenberg 1, King sur, temp abn 3086 ft.

CAMP COUNTY—Rogers et al's Enfelt 1, Montgomery sur, sd wo 1978 ft.

CASS COUNTY—Davis & Pigg's Ed Lambert 1, Lambert sur, temp abn 1952 ft.

RED RIVER COUNTY—D. M. Buffington's Hoosier 1, Hughart sur, sd 1080 ft. Shad Harper's Garland 1, Jos. Wagyley sur, sd wt fuel 1509 ft. Johnson Pet. Co.'s Randalph 2, Dean sur, temp. abn 1425 ft.

SHELBY COUNTY — Chapparral Oil Co.'s Holt 2, Matthew Moore sur, sd 2707 ft. Gulf Ref. Co.'s Caraway 1, Patterson sur, dr 880 ft.

UPSHUR COUNTY—F. S. Freeland's Newsom 1, Butler sur, arr d. s. test 2020 ft; Hudspeth 1, Jackson sur, dk pat.

SOUTHERN CALIFORNIA

Completions

Company, Well and Location	Initial Production Bbls.	Depth
FRESNO COUNTY—		
Fresno-Madera Oil Co.'s 1, 18-12-21	*	4150

BELLEFLOWER—Dollar Oil Co.'s Blythe 1, dr hard sand 3650 ft.

CALABASAS—Easton and Smith's Morrison 1, 19-1-17, sd 2955 ft.

CHATSWORTH—Russell Pet. Co.'s Joughin 2, dr sand 766 ft.

COSTA MESA—Mesa Pet. Corp.'s B. A. 1, fsh for dr pipe 3455 ft.

DOWNEY—Associated Oil Co.'s Taylor 1, 33-2-12, dr gray sand 5700 ft. Rio Grande Oil Co.'s Adams 1, 34-2-12, dr rock and shale 750 ft.

FULLERTON — Bastanchury Ranch Co.'s 1, 21-3-10, rig.

GARDEN GROVE—The Texas Co.'s Crawford 1, 35-4-10, dr hard sand 2975 ft.

HUNTINGTON BEACH—Western Drilling and Producing Co.'s P. R. 1, 18-6-10, dr gray sand 4325 ft.

INGLEWOOD—Ring Pet. Corp.'s Simons 1, rig. California-Eastern Oil Co.'s 1, 28-2-14, dr shale 2265 ft.

MAYWOOD—Richfield's Community 1, dr shale and sand 2260 ft.

MONTEREY PARK — Monterey Park Pet. Co.'s 1, sd 3950 ft.

NEWHALL — California Eastern Oil Co.'s Hasley 1, 5-4-17, will test oil sand at 2860 ft.

POMONA—Pomona Oil Assn.'s Community 1, 32-1-8, dr rock and shale 1000 ft.

PUENTE—Richfield's Didier 1, dr gray sand 3175 ft.

RIVERA—Empire Drilling Co.'s Purman 1, 14-2-12, dr gray sand 5325 ft.

SAN FERNANDO—Shell's Mission 2, running 6⅝-in cas to make production test, td 5690 ft.

RIVERSIDE COUNTY — Hall Pet. Co.'s Watt 1, 23-7-3, fsh 980 ft. Hemet Pet. Corp.'s Ward 1, 8¼-in cas cmt 1620 ft, td 3025 ft. Spindletop Oil Synd.'s Salton 1, 25-7-10, sr 3266 ft, td 3460 ft.

SAN BERNARDINO COUNTY—Western Pacific Oil Co.'s 3, dr brown shale 3340 ft.

SAN DIEGO COUNTY—Stanley S. Turner's Baler 1, dr shale and sand 1600 ft.

KERN COUNTY

BUTTONWILLOW—Doheny-Stone Drilling Corp.'s Salisbury 1, 7-29-24, cmt 8⅝-in cas, td 4630 ft. Lincoln Drilling Co.'s 1, 6-28-23, dr 200 ft. Southern California Gas Co.'s 1, 4-28-23, sd 4270 ft; Wisnom 1, 27-28-23, lcn.

COMANCHE POINT—W. W. Stabler's Tejon 1, 23-32-29, dr gray sand 3100 ft.

DELANO—S. A. Delzel's Vedder 1, 4-26-27, co 3075 ft.

EDISON—General Petroleum's Seale 10, 5-30-29, dr shale 3825 ft. Midway Northern Oil Co.'s Brown 1, 29-29-30, dr shale 3785 ft.

GOULD HILLS—Elmer Oil Co.'s 1, 2-29-20, cmt 10-inch casing 1125 ft. Exeter Oil Co.'s Pray 2, 1-29-20, co for prod test, td 870 ft. Oxena Oil Co.'s 1, 27-29-21, flowing water and oil, td 2930 ft. K. C. Wallace's 1, 32-29-21, sd 250 ft.

RIO BRAVO—Elmer Oil Co.'s 1, 8-28-25, dr shale and sand 5280 ft.

SAN EMIDIO—Standard's KCL-1, 35-11-22, dr 3800 ft. Union's KCL-1, 5-10-21, dr shale 1400 ft.

SEMITROPIC—Richfield's Kerwin 1, 21-26-22, killing gas flow, td 4760 ft.

SANTA BARBARA COUNTY

CARPENTERIA—Continental's Franklin 1, pulled in derrick, td 3350 ft.

GELETA—Fisher Pet. Co.'s Rekar 1, 8-4-29, dr shale 2755 ft.

POINT ARQUELLO—Standard's Schyvers 1, dr 300 ft.

POINT CONCEPCION—Standard's Gerber 1, rig.

SANTA BARBARA—Channell Oil and Development Co.'s 1, 29-4-27, dr shale 6310 ft.

SANTA MARIA—Shell's Union Sugar 1, 36-10-5, rigging up.

VENTURA COUNTY

CAMARILLO—American Oil Co.'s 1, 33-2-20, dr rock 645 ft.

NORTHERN CALIFORNIA

OJAI—Continental's Fox 1-M, 21-4-22, testing 8¼-inch cas, td 3025 ft; Thompson 1, 22-4-22, dr shale and sand 3120 ft; Freeman 1, 28-4-22, new lcn. E. J. Miley's Casitas 2A, 12-3-21, rigging rotary. Rancho Riva Oil Co.'s 8, 28-4-23, fsh 260 ft.

PIRU—Bolsa Chica Oil Corp.'s Hidden 1, 5-4-18, bldg rig. Rio Grande Oil Co.'s B. B. N. 1, 13-4-19, co 2100 ft, td 2150 ft. Pacific Western Oil Co.'s 5, 3-4-28, changing to rotary, td 3200 ft. Wasibi Oil Co.'s Bishop 2, 34-3-19, dr shale and sand 2800 ft.

SANTA PAULA—W. W. Bryant's 3, 21-4-21, dr brown shale 755 ft. San Pedro-Pt. Fermin Synd.'s Kellerman 1, 13-4-21, dr gray sand 700 ft.

SATICOY—Standard's Citrus 5, 10-2-22, dr brown shale 4122 ft. Ohio's Alexander 1, dr brown shale 4765 ft.

SIMI—Emma F. Exline's Seaton 1, fsh for dr pipe, td 2410 ft. Shell's Marr 1, 31-3-17, 10-in cas cmt 615 ft.

SOUTH MOUNTAIN — Ring Pet. Corp.'s Converse 1, 3-3-21, loosening 4¾-in cas, td 4840 ft.

MISCELLANEOUS

FRESNO COUNTY — Fresno-Madera Oil Co.'s 1, 18-12-21, abn 4150 ft.

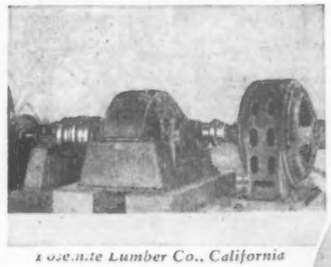
SAN LUIS OBISPO COUNTY — Arroyo Grande Oil Co.'s 2, 21-31-13, lcn. Holland and Kennebrew's Vishnu 1, 22-32-22, re-dr 1700 ft. North Star Oil Co.'s 1, 11-22-18, dr brown shale 2212 ft. Panorama Oil Co.'s 1, 7-31-21, dr shale and sand 3255 ft. San Luis Synd.'s 1, 29-31-13, co 3100 ft. Union's Russ 1, 34-32-15, re-dr 3050 ft; Chandler 1, 12-32-15, dr shale and sand 2877 ft.

SONOMA COUNTY—Shell's Doss 1, 29-5-6, dr gray sand 2150 ft.

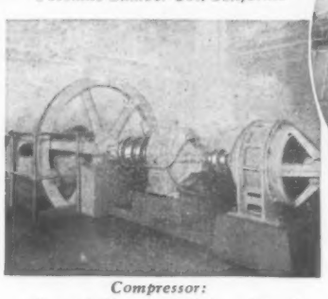
TULARE COUNTY—Angiola Dev. Co.'s 1, 27-22-23, dr shale and sand 1450 ft. Kings-Tulare Synd.'s Palmer 1, 19-21-23, dr brown shale 5688 ft.

KANSAS

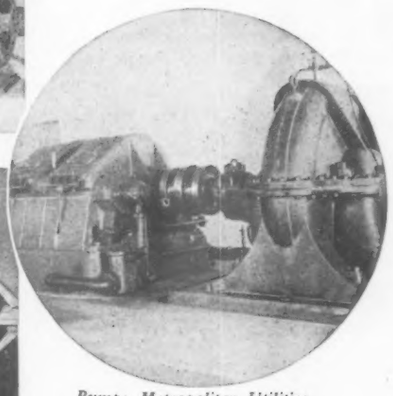
BARBER COUNTY — Barbara Oil Co.'s Lytle 1, cnl ne ne sw 12-33-13w, rig. Barbara's Blunk 1, c ne nw 20-34-13w, rig. Ro-



Yosemite Lumber Co., California



Compressor: General Motors Building, Detroit



Pump: Metropolitan Utilities, Omaha

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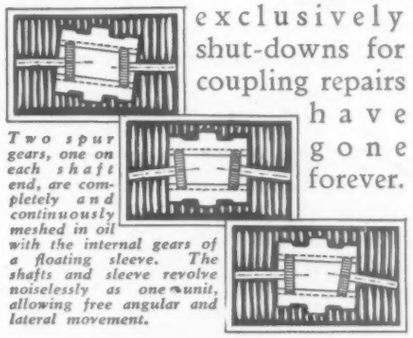

Two spur gears, one on each shaft end, are completely and continuously meshed in oil with the internal gears of a floating sleeve. The shafts and sleeve revolve noiselessly as one unit, allowing free angular and lateral movement.

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See how simple it is. Mechanical flexibility is used throughout. See the diagram. See the way simple or compound misalignment is taken up by the floating sleeve principle. Instead of relying on flexible materials that would inevitably fail, all misalignment is taken up between the gear faces. Oil, under centrifugal pressure, carries the load.

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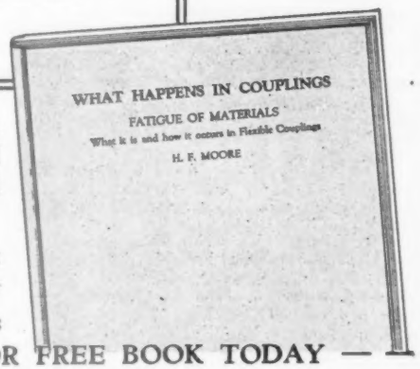

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land et al's Pickens 1, ne nw ne 27-30-14w, sd 4223 ft. Allison & Fitzwilliams' Morrise 1, c nw se se 9-30-12w, rig.

BUTLER COUNTY—LaRobb et al's Bransenger 1, ne se 24-27-3e, ru. Barnsdall's Means 1, nw sw 34-27-2e, sd 1860 ft.

CHASE COUNTY—Grisner & Fowler's Carson 1, ne ne 9-21-7e, sd 3150 ft.

COWLEY COUNTY—Pyle & Sutter's Lindstrum 1, se ne 9-35-4e, dr 750 ft. Empire-Marland-Twin State's Feaster 1, nw ne 36-32-5e, dr 3250 ft. Wakefield & Osborne's Osborne 1, nw ne 18-30-5e, rig.

EDWARDS COUNTY — Amerada-Wilcox's Teansil 1, nw cor 32-25-19w, dr 3815 ft. British-American Oil Co.'s McCarty 1, ne nw 31-25-17w, spudded and sd.

ELLIS COUNTY — Rush Oil Co.'s Gatewood 1, nw 4-15-20w, sd 1100 ft. Finney & Weimer's Freeman 1, nw se se 24-15-20w, spudded and sd. Empire's Wann 1, ne 31-12-19w, 3 bailers oil hr at 3505-15 ft. Marland's Vine 1, sw se 27-11-9w, dr 3558 ft. Transcontinental's Boetcher 1, nw se sw 21-13-19w, set 5-inch 3758 ft. Phillips Brull 1, c nw 34-14-17w, dr 705 ft. Phillips' Schmeidler 1, nw cor 20-12-17w, ru. Labette Oil Co.'s Urbank 1, ne nw nw 19-15-16w, dr 3264 ft. Cosby et al's Robbins 1, sw nw 15-14-16w, rig. Thomas Moncrief's Johnson 1, sw ne 9-13-19w, ru. Derby & Empire's Krause 1, nw sw sw 17-14-19w, ur cas 3829 ft. Davis & Hazlett's Weiland 1, nec 1-13-16w, dr 500 ft.

GREENWOOD COUNTY—P. H. Balieu's Bright 1, ne sw 22-27-1e, sd 1210 ft.

HARPER COUNTY—Amerada's Mendiville 1, c se se 24-34-6w, co 5353 ft.

HARVEY COUNTY — Margaret Gay Oil Co.'s Grouse 1, nw ne nw 29-23-1w, timbers. Helmerick & Payne's Lindamood 1, c sw ne sw 2-22-1e, spudded. Empire's Tangeman 1, c sw ne ne 19-22-1e, rig.

JEFFERSON COUNTY—Wichita Oil Co.'s Simpson 1, nw sw sw 19-10-17e, ru and sd.

LANE COUNTY — Blankenship Pet. Co.'s Schaeffer 1, enc ne 24-16-28w, spudded and sd.

MARION COUNTY—Empire's Jensen 1, se nw 26-22-5e, ur 6-inch at 2605 ft.

MARSHALL COUNTY — Irwin et al's Cooper 1, ne nw 10-3-7e, spudded.

MITCHELL COUNTY—Ben Gurley et al's Crombil 1, c ne ne 32-9-7w, dr 4067 ft.

MORRIS COUNTY—Hugh Faulder's Wendt 1, sw se se 19-15-5e, rig. Skelton et al's Iles 1, nw nw 25-16-5e, rig.

McPHERSON COUNTY—McPherson County Gas Co.'s Stein 1, sw ne sw 17-18-1w, ur 3070 ft. McPherson County's Gustafson 1, c ne 9-17-2w, dr 3475 ft. Ted Washabaugh's Vosshell 1, ne ne 9-21-3w, dr 1945 ft. Lariaux et al's Martinan 1, ne se 9-19-3w, rig. Mid Kansas' Yoder 1, c nw sw 8-20-4w, dr 670 ft.

NESS COUNTY—Barnsdall's Lauck 1, c sw 35-18-21w, spudded.

OSBORNE COUNTY—L. D. Jarvis' Jellison 1, sec 13-10-15w, spudded and sd.

OTTAWA COUNTY—Anderson et al's Bank 1, ne nw 28-10-2w, sd 3820 ft.

PAWNEE COUNTY—F. C. Troupe's Lovett 1, cel ne ne 31-21-16w, sd 1650 ft.

PHILLIPS COUNTY—Watsonian Oil Co.'s Marklein 1, ne sw 21-3-19w, sd 3015 ft. Watsonian and British-American's Weinman 1, c sw sw 34-2-19w, timbers.

RICE COUNTY — Allison & Fitzwilliams' Poland 1, ne sw ne 36-18-8w, cellar. Higgins & Steinbuble, Shurr 1, ne sw 21-20-10w, spudded and sd.

RENO COUNTY—Austin Drlg. Co.'s Strickly 1, swc nw 17-26-5w, timbers.

ROOKS COUNTY—Krueger et al's Poore 1, ne ne 14-8-18w, dr 3403 ft. Prairie's Sandberg 1, c sw 20-9-18w, rig. Prairie's Gick 1, c se 22-9-19w, rig.

RUSH COUNTY—Danciger O. & R. Co.'s Pinonka 1, c ne sw ne 17-19-17w, dr 300 ft. Sinclair's Beiching 1, nw ne nw 9-16-16w, dr 3472 ft. W. H. Skelton et al's Brack 1, nec sw sw 12-17-16w, spudded. Phillips' Legleiter 1, c ne nw se 10-16-18w, spudded and sd.

SALINE COUNTY—M. Esty et al's Peterson 1, c ne 6-16-5w, spudded and sd. Nathan-Jones et al's Robertson 1, nw sw 27-14-2w, dr 2765 ft.

SEDGWICK COUNTY—LaRobb Oil Co.'s Davis 1, ne sw se 36-25-1w. Buvibar Pet. Co.'s Steel 1, sec 1-26-2w, td 3310 ft, ur 6-inch csg. Barnsdall's Samuels 1, ne nw 24-25-1e, dr 2490 ft. Barnsdall's Faber 1, sw ne 6-27-1w, td 3010 ft ur 8-inch csg. Morgan & Tilley's Fitzgerald 1, nw ne 5-26-1w, ru. Van Zandt & Mason's Fox 1, c nw sw 19-25-1w, dr 2825 ft. Connell Oil Co.'s Cross 1, ne cor 27-25-1e, dr 2750 ft. Morgan et al's Corn 1, sw ne 28-25-1w, sd 200 ft. Kyser et al's Stroot 1, sw nw 8-26-1w, setting 20-nich 100 ft. H. H. Patton's Ryder 1, nec 22-25-1e, rig. Lario & Blair's Tjaden 1, c ne se 22-29-2w, dr 940 ft. Maglason's Buckles 1, nw se 3-28-1w, sd 250 ft. McCulloch et al's John 1, c ne sw ne 24-29-1e, dr 1685 ft. Miller & Wentz' Shaeffer 1, nw ne 9-27-2w, rig.

SHERMAN COUNTY—A. L. Henson et al's Murray 1, ne se nw 22-7-40w, sd 3035 ft.

SMITH COUNTY—Mid-Kansas's Blank 1, nec 4-2s-13w, spudded.

STEPHENS COUNTY—W. Sidwell et al's Kelly 1, sw ne 16-34-38w, sd 1160 ft. Trees Oil Co.'s Unknown 1, sw ne sw 3-35-38w, skid rig. McKenna et al's Hamm 1, se ne 10-33-38w, dr 1510 ft.

SUMNER COUNTY—Gypsy's Williams 1, nw se sw 16-35-3w, dr 4400 ft. McCulloch et al's Tuttle 1, sw ne 29-34-1w, sd 4350 ft. Otstot et al's Velker 1, nw ne 9-35-1e, rig. Davidson et al's Strickland 1, sw se 12-35-1w, rig.

TREGO COUNTY—Central Commercial Oil Co.'s Ellis 1, ne sw ne 20-13-21w, sd 3030 ft.

WASHINGTON COUNTY—McCool & Vicent's Linn 1, nw ne 7-4-3e, ru.

OKLAHOMA

WOODS COUNTY—T 28n, R 18w, Sec. 11, George Vincent et al's Freedom 1, c sw, ponds.

GRANT COUNTY—T 28n, R 3w, Sec. 24, Lario O. & G. Co. et al's Connell 1, nwc, dr 955 ft.

HARPER COUNTY—T 27n, R 21w, Sec. 24, A. F. Kopisch Oil Co.'s Selman 1, nec se, spudded and sd.

WOODS COUNTY—T 27n, R 15w, Sec. 20, Sooner State Oil Co. & E. R. Black's Marcum 1, c sw, spudded and sd.

GRANT COUNTY—T 26n, R 4w, Sec. 34, Sooner State Oil Co.'s Royce 1, swc nw, sd 550 ft.

KAY COUNTY—T 26n, R 2e, Sec. 32, J. A. Vincent & Nat. Union's McNeal 1, nwc ne, sd 2795 ft.

HARPER COUNTY—T 25n, R 22w, Sec. 14, Hoffer Oil Co.'s Cooper 1, nwc se, sd 4182 ft, litigation.

WOODS COUNTY—T 25n, R 15w, Sec. 10, Bu Vi Bar et al's 1, sec sw, sur. pipe 80 ft.

GRANT COUNTY—T 25n, R 4w, Sec. 22, Cowden's Vollner 1, nec se ne sw, lost tools 5640 ft, sd.

TEXAS COUNTY—T 1n, R 18 E.C.M., Sec. 11, Three Way Oil Co.'s Price 1, sec nw, hfw 3490 ft, sd.

WOODWARD COUNTY—T 24n, R 17w, Sec. 32, Otstot Dev. Co.'s Simmons 1, sec, sd 1500 ft.

WOODS COUNTY—T 24n, R 13w, Sec. 18, Miller et al's Copenhaver 1, nwc, spudded and sd.

GARFIELD COUNTY—T 24n, R 6w, Sec. 9, Pulse & Beamer's White 1, sec nw, sd 4755 ft.

WOODWARD COUNTY—T 23n, R 20w, Sec. 9, Billy Oil Co.'s Wyatt 1, c se, 10-inch 1553 ft. T 21n, R 21w, Sec. 25, Sharon's Elmore 1, swc, sd 3025 ft, rig blown down.

MAJOR COUNTY—T 20n, R 14w, Sec. 23, Keller et al's Horton 1, c ne ne, spudded and sd.

GARFIELD COUNTY—T 20n, R 4w, Sec. 9, Marland Oil Co.'s Looman 1, nec se, sd 5735 ft, casing parted. Sec. 12, Marland Oil Co.'s Miller 1, swc, hfw 4586 ft, sd.

DEWEY COUNTY—T 18n, R 15w, Sec. 9, Huckleby & McCoy's Perfect 1, nec, fsh 4395 ft.

LOGAN COUNTY—T 18n, R 3w, Sec. 33, Haley & Consolidated Drlg. Co.'s Quier 1, sec sw, fsh 3970 ft.

LOGAN COUNTY—T 18n, R 2w, Sec. 21, Tibbets & Bond's Donahue 1, swc nw se, show of oil at 5395-5405 ft, sand 6002-22 ft wtr, sd.

KINGFISHER COUNTY — T 16n, R 6w, Sec. 27, Crawford & McKenna's Sturgeon 1, nec sw, sd 4846 ft.

BLAINE COUNTY—T 15n, R 12w, Sec. 26, W. J. Donley's Dickens 1, sec ne, dr 4390 ft.

CANADIAN COUNTY—T 14n, R 6w, Sec. 9, A. D. Spear's Piatt 1, swc ne, sd 3223 ft.

OKLAHOMA COUNTY—T 13n, R 3w, Sec. 18, Slick and Bailey's Lufkin 1, c ne se, dr 4775 ft. T 12n, R 3w, Sec. 15, Cromwell et al's Thompson 1, swc ne ne, dr 7092 ft. T 11n, R 3w, Sec. 24, I. T. I. O. Co.'s Park 1, c se se, est. 40 M gas 4793-4816 ft, ts 6382 ft, dr 6490 ft, 5745 bbls per day.

CANADIAN COUNTY—T 10n, R 6w, Sec. 1, J. V. Bailey's Robinson 1, c ne nw, spudded and sd.

OSAGE COUNTY—T 22n, R 8e, Sec. 8, Harry McGill's 1, swc se, sd 2350 ft hfw.

PAWNEE COUNTY—T 22n, R 5e, Sec. 33, Washoma O. & G. Co.'s Buffalo 1, sec nw, td 3730 ft sd.

LINCOLN COUNTY—T 16n, R 4e, Sec. 15, J. V. Bailey et al's House 1, c ne se, cmtd 8-in csg 3384 ft rust, co. T 16n, R 6e, Sec. 19, Morgan & Flynn's Finley 1, swc, lcn. T 15n, R 6e, Sec. 23, Shaffer O. & R. Co. et al's Pinkston 1, nec sw, dr 4085 ft. T 12n, R 3e, Sec. 29, Phillips Pet. Co.'s Roberson 1, sec nw, rig.

CREEK COUNTY—T 14n, R 9e, Sec. 1, Shaffer O. & R. Co.'s Polk 1, nwc ne se, dr 3150 ft. Sec. 10, Transcontinental Oil Co.'s Taylor 1, nwc sw se, dr 750 ft. Sec. 26, T. Kelley et al's Anderson 1, swc se, rog.

OKFUSKEE COUNTY—T 12n, R 9e, Sec. 30, Tidal Oil Co. et al's Barnett 1, sec ne ne, dr 260 ft.

MUSKOGEE COUNTY—T 13n, R 18e, Sec. 33, L. T. Haynie's Linder 1, c se, show gas 2200-49 ft, sd 2298 ft.

McINTOSH COUNTY—T 12n, R 18e, Sec. 15, A. B. Wolfe et al's Beck 1, nwc se, spudded and sd.

PITTSBURGH COUNTY — T 9n, R 16e, Sec. 32, Pattison et al's McDuff 1, swc nw se, 3M gas 4613-35 ft, Wilcox 5443-65 ft, cable tangled, drilled for 19 days, made no hole.

HASKELL COUNTY—T 9n, R 18e, Sec. 10, Marion Oil Co.'s Sanders 1, nwc ne sw, rebuilt rig 1800 ft, sd.

PITTSBURGH COUNTY — T 6n, R 14e, Sec. 7, McAylor et al's Reed 1, nwc sw nw, sd 1103 ft.

LATIMER COUNTY—T 5n, R 18e, Sec. 15, Limestone O. & G. Co.'s Murray 1, swc 1½ M gas 2518-22 ft sd.

SEMINOLE COUNTY—T 11n, R 6e, Sec. 27, Fuhrman Pet. Co.'s Fay 1, sec nw sw, dr 4674 ft.

OKFUSKEE COUNTY—T 11n, R 7e, Sec. 21, T. B. Slick's Wolfe 1, sec ne se, dr 3600 ft.

SEMINOLE COUNTY—T 11n, R 7e, Sec. 34, Phillips Pet. Co.'s Mill 1, nwc sw, dr 3360 ft. T 10n, R 7e, Sec. 5, Marland Oil Co.'s Strothers 1, nwc se ne, fsh 3550 ft. Sec. 18, Shaffer O. & R. Co. et al's Jones 1, swc ne, ts 4705-10 ft, hfw, pb 3715 ft, sd.

POTTAWATOMIE COUNTY—T 9n, R 4e, Sec. 11, Atlantic & Phillips' Bank 1, swc ne ne, Wilcox 4655-60 ft hfw, sd. T 9n, R 5e, Sec. 30, Magnolia Pet. Co.'s Germany 1, sec nw, top Hunton 4159 ft, 1200 ft fluid in hole, fsh 5-inch 4395 ft. T 8n, R 2e, Sec. 24, Superior Oil Corp.'s Jones 1, swc nw ne, fsh 4932 ft. T 8n, R 3e, Sec. 12, T. B. Slick's Nix 1, sec nw nw, dr 3255 ft.

SEMINOLE COUNTY—T 8n, R 8e, Sec. 4, McCullough's McGilbray 1, swc ne, fsh 1450 ft.

CLEVELAND COUNTY—T 7n, R 1w, Sec. 15, Sooner Oil Co.'s Vandeveer 1, nec nw sw, sd 3120 ft.

POTTAWATOMIE COUNTY—T 7n, R 2e, Sec. 17, T. B. Slick's Spangler 1, nwc se nw nw, top Simpson 6055 ft, td 6098 ft, 700 ft wtr, sd. T 7n, R 5e, Sec. 14, Champlin Ref. Co.'s Harber 1, swc ne sw, Wilcox 4419-24 ft, hfw, dry and abn.

POTTAWATOMIE COUNTY—T 6n, R 5e, Sec. 17, Roxana Pet. Corp. et al's Lowe 1, swc nw ne, top sand 4393 ft, td 4414 ft, hfw, sd.

McCLAIN COUNTY—T 5n, R 3e, Sec. 29, Empire's Bonner 1, se nw nw, cemt 8-inch 4160 ft.

SEMINOLE COUNTY—T 5n, R 6e, Sec. 11, T. B. Slick's Harjo 1, nwc ne, Wilcox 3940-50 ft, hfw, sd.

HUGHES COUNTY—T 5n, R 9e, Sec. 17, E. W. Whitney's Huddleston 1, sec sw, show oil 2745-55 ft, sd 3000 ft.

PONTOTOC COUNTY—T 4n, R 8e, Sec. 23, Independent's Hampton 1, nec se, rog.

MURRAY COUNTY—T 1n, R 2e, Sec. 17, Revels & McGee's Wolfe 1, nwc, sd 1770 ft.

COAL COUNTY—T 1n, R 9e, Sec. 24, Galbreath et al's Jones 1, swc se, sd 3270 ft.

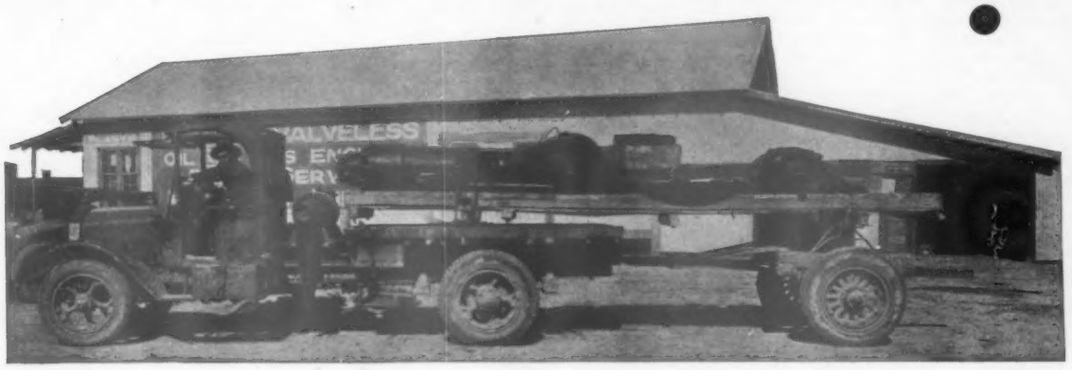
CUSTER COUNTY—T 14n, R 14w, Sec. 1, W. E. Witt's Wellman 1, c se, sd 100 ft.

CADDO COUNTY—T 12n, R 11w, Sec. 15, Abernathy & Ashton's 1, c nw, sd 4603 ft.

ROGER MILLS COUNTY—T 11n, R 26w,

FRANKLIN VALVELESS OIL AND GAS ENGINES

All Aboard!



The Entire Franklin Engine is Easily Moved on One Truck Load—

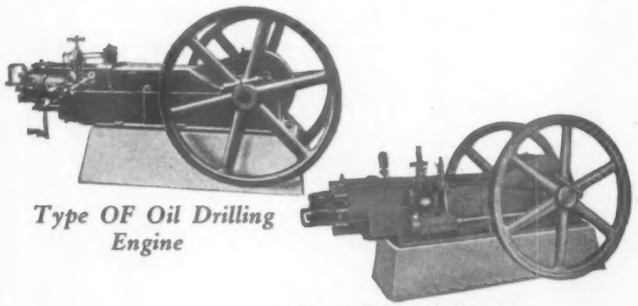
One truck—that's all. And no overloading or straining of the truck.

The Franklin Engines are not bulky. Good material and scientific design give the Franklin Engine greater strength without useless weightiness.

And loading the Franklin is as quick and efficient as a military movement. The few parts necessary to remove for loading come off easily, and are quickly assembled after unloading.

Yet, the best part of the Franklin is that you've got something when you get it set up. The Franklin Oil Drilling Engine has a fine record of performance. They show power, speed and flexibility.

The Franklin pumping engine displays a sturdiness that has gained many friends on the oil field. These pumpers come in 30, 40, 50 and 75 horsepower.



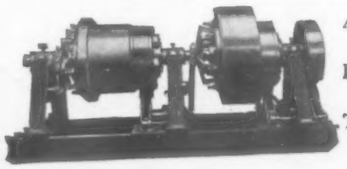
Type OF Oil Drilling Engine

Type AO Oil Pumping Engine

Two speeds in either forward or reverse—all bearings enclosed —run in oil or grease.

All brake band and clutch discs adjusted without stopping the engine.

All brackets, bell cranks, toggle arms, brake cranks, levers, driving discs, spiders and sliding sleeves made of steel.

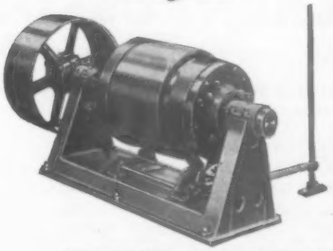


All similar parts of clutch interchangeable.

Belt driven — no shaft breakage.

The 2 SD Clutch will pull the largest bailer wthout faltering.

Type BG for Cable Tool Drilling, etc.



Here is a clutch that will operate satisfactorily and smoothly for cable tool drilling or for pumping operations. The BG type has one speed forward and reverse. It is much the same construction as the 2 SD clutch.

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OIL WELL SUPPLY COMPANY

Branches in All Oil Fields

Sec. 4, L. C. Hivick's Davis 1, c nw ne, sd 700 ft.

BECKHAM COUNTY—T 8n, R 25w, Sec. 1, E. L. Martin's Daly 1, c nw se, set 8-inch 2450 ft. T 8n, R 21w, Sec. 33, Day Oil Co.'s Ault 1, c nw nw, dr 1400 ft.

KIOWA COUNTY—T 7n, R 16w, Sec. 26, Connor & Son's Geis 1, sec nw ne, sd 1712 ft. T 7n, R 15w Sec. 35, Davis Malernee's Van Kirklan 1, nwc, sd 858 ft. T 6n, R 16w, Sec. 18, Alexander et al's Fuqua 1, swc ne, owdd, sand 428-440 ft, pumped 225 bbls in 31 hrs, sd for storage. T 6n, R 15w, Sec. 6, Johnson's McDowell 1, c sw ne, dr 2375 ft.

KIOWA COUNTY—T 6n, R 14w, Sec. 31, Sloan et al's Sloan 1, ne cor, lcn.

CADDO COUNTY—T 6n, R 12w, Sec. 29, W. J. Hartley's Gilbreath 1, se cor nw se, owdd, sd 3394 ft.

KIOWA COUNTY—T 5n, R 14w, Sec. 6, Russell & Sloan's Rushton 1, ne cor sw se, dry and abn 1524 ft.

COMANCHE COUNTY — T 4n, R 11w, Sec. 2, Wirt Franklin's Hollow 1, nw cor, show gas 1446-63 ft, dr 2092 ft.

JACKSON COUNTY—T 1n, R 20w, Sec. 4, Houseman et al's Northington 1, ne cor, sd 2020 ft.

KIOWA COUNTY—T 1n, R 17w, Sec. 13, Allen Bros.' Howell 1, n wcor se, sd 535 ft.

STEPHENS COUNTY—T 1n, R 7w, Sec. 2, Stahl & Burris' Jefferson 1, se cor ne nw, fsh 2624 ft.

JACKSON COUNTY—T 1s, R 20w, Sec. 33, Stanley McGregor's 1, sw cor nw sw, sd 2425 ft.

STEPHENS COUNTY—T 1s, R 7w, Sec. 12, Ilsing, Russell & Nance's Houston 1, ne cor sw sw, sand 1930-36 ft, testing.

KIOWA COUNTY—T 2s, R 16w, Sec. 6, Landfair's 1, se cor sw se, dr 2535 ft.

TILLMAN COUNTY—T 3s, R 18w, Sec. 29, Dixie Oil Co.'s Harrison 1, ne cor nw, dr 1290 ft.

COTTON COUNTY—T 3s, R 10w, Sec. 11, E. J. Stumpf Jones 1, nw cor ne, lcn.

STEPHENS COUNTY—T 3s, R 8w, Sec. 26, E. J. Stumpf's Simon 1, sw cor, rig.

COTTON COUNTY—T 4s, R 12w, Sec. 16, Guiler & Pyson's Thomas 1, se cor sw, show oil and gas 1252-54 ft, sd 2127 ft.

JOHNSTON COUNTY—T 1s, R 7e, Sec. 29, Smithy & Kinsley's Lane 1, se cor nw, sd 1306 ft.

CARTER COUNTY—T 4s, R 2e, Sec. 32, Texokla Drlg. Co.'s Anderson 1, se ne se, dr 165 ft. T 5s, R 3w, Sec. 19, Devonian Oil Co.'s Myer 1, nw cor se, dr 915 ft.

BRYAN COUNTY—T 9s, R 9e, Sec. 36, W. G. Endicott's Craig 1, c nw ne, fsh 830 ft.

MOUNTAIN STATES

COLORADO

ARCHULETA—Juanita Oil Co., Harvey 1, sw 4-32n-3w, stand 725 ft.

BENT—Marland Oil Co., Pipe Springs 1, se 27-29s-49w, sd water shortage 3987 ft.

JACKSON—Producers & Refiners, State 1, ne 2-6n-81w, sd 1900 ft.

JEFFERSON—Ruby Hill O. & G. Co., Braden 1, se 14-4s-69w, fsg 775 ft.

LAS ANIMAS—Alavier Pete Co., Branson 1, ne 3-35s-58w, sd for winter. Parker Club-Kinney Coastal 1, se 4-28s-6w, co, td 1350 ft.

LAPLATA—Royal P & R Co., Red Mesa 1, 27-33n-12w, sd 650 ft, bad roads.

LINCOLN—Kelly Oil Co., State 1, ne 36-14s-57w, sd 1415 ft.

MESA—Peerless Oil Co., Hoel 1, ne 23-8s-104, td 2058 ft., ready to deepen.

MORGAN—Badger Creek O. & G. Co., Kent 1, sw 2-50n-10, sd 800 ft.

MOFFAT—Ohio Oil Co., State 1, 16-12-100, fsg 3165 ft. Alliance Oil Co., Milliken 1, 14-4n-92w, susp 3575 ft. McLaughlin et al, Wms 1, 2-3n-91w, dr 575 ft. McCormick et al, Sales 1, se 28-4n-92w, sd 2700 ft, may skid rig.

MONTROSE—Uncompahgre O. & G. Co., Colorado Title & Trust Co. 1, 27-50n-10w, ur 1371 ft.

RIO BLANCO—White Eagle O. & R. Co., Fordham 1, sw 9-2s-86w, fsg 450 ft.

YUMA—Etnyre Synd., sw 7-2s-43, dr 1010 ft.

WELD—Platte Valley Pete Corp., Patterson 1, sw 24-6n-61w, dr 4175 ft.

UTAH

GRAND—Utah Southern, Salt Valley 1, 13-23-21, contr compl to 3000 ft; Shaffer 1A, 36-26-20, dr 2578 ft. Navajo Pete Co., 2-29-21, sd for winter at 2845 ft. Intermountain Venture Co. 1, sw 27-21s-19, sd 1602 ft. Big Six Oil Co., and Utah Oil Refining Co., Randall 1, 10-22-19, fsg 1710 ft. Brendell Sons, Crescent Eagle 2, 9-22-19, td 100 ft. Cisco Union O. & G. Co., 20-21-22, spdd.

DUCHESNE—Utah Southern Oil Co., Farnsworth 1, 29-4-1, dr 1885 ft.

SAN JUAN—Boulder Knoll O. & G. Co., 17-34-25, prep to resume at 2640 ft. Navajo Pete Co. of Calif. 1, 17-35-24, location.

UINTAH—Maude Ellen Oil Co. 1, 28-3s-21e, oil show at 1435 ft.

UTAH—Diamond Oil Co. 3, ne 29-8s-5e, td 1700 ft.

WAYNE—Phillips Pete Corp. 1, 16-27-16, dr 4300 ft.

MONTANA

BIG HORN—Texas-Montana Prod. Co. 2, 21-6s-35e, run cas 1100 ft.

BROADWATER—New Day Oil Co. 1, ne 29-5n-1e, dr bel 970 ft.

BLAINE—Ohio Oil Co., Winngert 1, 3-34n-32e, fsg bailer 2315 ft.

CASCADE—Eden O. & G. Co., 27-18-4e, gas show at 778 ft. U. S. Pete Co., Millelr 1, 8-21-4e, fish cave. Jno. E. Winter et al, Power 1, 11-22-1e, abdn. Lone Star, McLean 1, 13-21n-3e, dr 780 ft. Rothrock & Reynolds, McIver 1, se 12-20n-2e, dr 200 ft.

CARBON—Ohio Oil Co., Northern Pacific 1, 11-7s-21e, fsg 4458 ft.

CHOTEAU—Geraldine O. & G. Co., ne 1-21-11e, dr 1425 ft. Williston-Shelby O. & G. Co. 1, 12-28-11e, fsg 2730 ft.

CUSTER—Montana Belle, ne 28-8n-45e, dr 1400 ft last report.

FERGUS—Melton Corp. 1, se 24-21-17e, resume dr 2665 ft. Judith Basin Oil Co. 1, 33-19n-12e, resum 1925 ft, after holiday shutdown.

GALLATIN—California Co., Ringling 1, 35-5n-7e, try for water shutoff at 600 ft.

JUDITH BASIN—Gem Oil Co., 15-16-10e, rig up.

LIBERTY—Sunburst O. & R. Co., Bear's Den 1, nw 17-36-6e, fsg 1250 ft. Square Deal Pete, Johnson 1, se 1-32-7e, ream to so water at 3020 ft, td 3200 ft. Mid-Rocky Dev. Co., Federal Lands 1, 7-33-7e, sd 1500 ft. Western Natural Gas Co., 22-37-4e, fsg 2072 ft. Cypress Oil Co., State 1, sw 36-28-6e, dr 1500 ft.

MUSSELSHELL—Laffea Oil Co. 1, 6-10n-25e, location.

PONDERA—Trapp Synd. Hover 1, 35-28-3w, dr 2100 ft.

STILLWATER—J. S. Stewart, 5-2n-22e, stand cement 2130 ft.

SWEETGRASS—Shoshone Consolidated 1, 23-2n-15e, dr out cement plug 4010 ft.

TETON—Texas Pacific, 12-22-1w, mvg in. Mitchener et al, Mattoon 1, sw 3-23-1w, dr 1675 ft.

WYOMING

ALBANY—Union of California 1, 1-16-76, abn.

BIG HORN—Utah Southern Oil Co. 3, 26-56n-87w, prep to test at 3765 ft. Producers & Refiners 3, 24-56-98, rigged rotary 2708 ft. Prairie O. & G. Co., Chilcote 1, 35-56n-95w, dr 2250 ft. P. & R. South Frannie 1, 7-57-97, dr 1393 ft.

CARBON—P. & R. 3, 2-19-88, dr on iron 3909 ft; O'Brien Springs 6, 12-24-88, drill 138 ft. Graybeal Synd., 16-28-81, temp sd 5184 ft. Producers Oil Corp., se 35-12-92w, ready to resume, td 1005 ft. W. J. Davis, 6-16-92, location.

CROOK—Geo. W. Douglas, 34-52-67, location.

FREMONT—P. & R., Muskrat 2, nw 1-33n-92w, location. Gates & Holman, 6-33-94, material on location. Kinney-Coastal 1, 22-3n-1w, rig up.

HOT SPRINGS—Texas Prod. Co., sw 23-45n-100w, standing cement at 525 ft. Westland Oils, Inc., 23-44n-95w, rig. MacPherson Oil Co., 2-44n-96w, fsg tools 2197 ft.

LINCOLN—Midwest Refining Co., Waterfall 1, 35-22-115, dr up lugs and run cas., td 1765 ft. Midwest Refining Co., Little Grey's River 1, 25-37-113, sd 767 ft. Quad States, se 11-19-16, dr 2500 ft. Reeves Aylemore, 7-21-119, change to rotary.

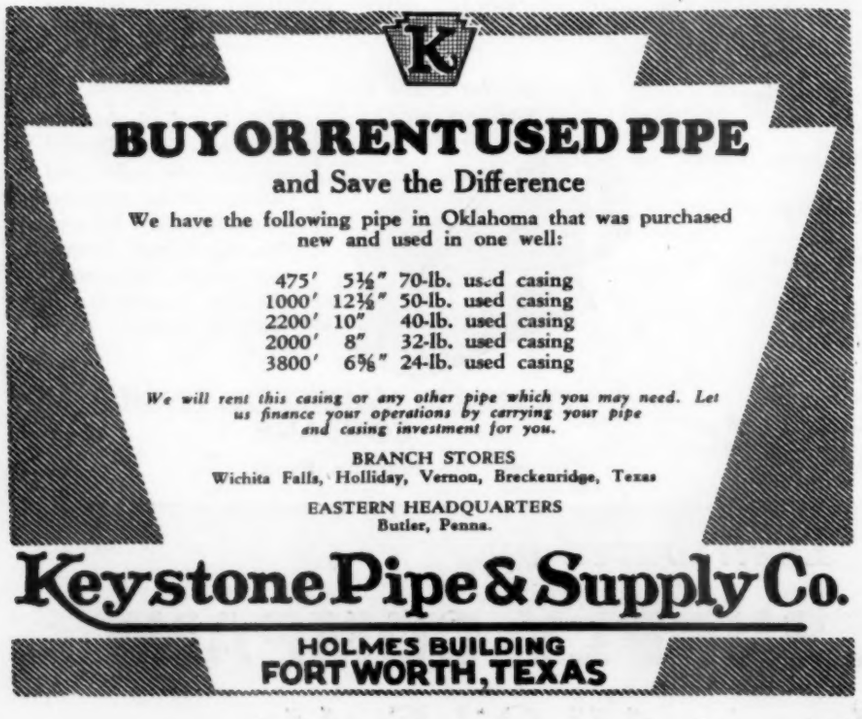
PARK—California Exploration Co. and P. & R., Pitchfork 1, 12-48n-102w, cem. 20-in. at 225 ft. Resolute Oil Co., nw 17-57-101, dr 2000 ft. Cody Pete, Nelson 1, 4-51-102, dr 2000 ft. Oregon-Wyoming Oil Co. 1, sw 30-52-101, 10-in. cement at 1030 ft. Ohio Oil Co., Pulley 1, 27-53-101, plug back and shut out water. Lenco Oil Co., Pulley 1, 25-53-101, dr 725 ft. California Expl. Co. 1, 29-48-103, sd 200 ft. Midwest, 36, 25-58-98, rigging. Midwest, Kirk 1, se 23-58-98w, dr 200 ft. Grebo Royalties, Inc., se 2-47-100w, hole straight, 1520 ft., will set casing.

SWEETWATER—Prairie O. & G., Tucker 1, 18-13-99, cement 8¼-in. at 2480 ft. Ohio Oil Co., Humphreys 1, 2-12-101, dr 1630 ft. Sormir Pete Co., 13-21-100, stand 1335 ft.

SUBLETTE—California Co., Wyss 1, 12-32n-115w, dr 1085 ft. California Co., Buchell 1, 11-29-11s, run core bbl. 2503 ft.

UINTA—California Co., U. P. 1, 7-17-116w, radiator leaking 2245 ft. E. L. Doheny, 6-14-118, dr 2350 ft.

WESTON—Wyo. Drg. Synd., ne 15-44n-64w,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We have the following pipe in Oklahoma that was purchased new and used in one well:
475' 5½" 70-lb. used casing
1000' 12¼" 50-lb. used casing
2200' 10" 40-lb. used casing
2000' 8" 32-lb. used casing
3800' 6⅝" 24-lb. used casing
We will rent this casing or any other pipe which you may need. Let us finance your operations by carrying your pipe and casing investment for you.
BRANCH STORES
Wichita Falls, Holliday, Vernon, Breckenridge, Texas
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Butler, Penna.
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HOLMES BUILDING
FORT WORTH, TEXAS

getting down to Facts!

At the bottom of this ad you'll see visible evidence of our ability to serve.

If we could visualize to you the vast distributing organization throughout America, you would understand why

WILLIAMSPORT WIRE LINE

TELFAX TAPE MARKED FACTORY CERTIFIED

has become so much preferred.

But its growth is due not alone to the superior, uniform quality of material and the service we give in every field, but to the PROTECTION against substitution of lines of the wrong grade (tensile strength) by use of the Telfax System of tape marking. This or any such protection is obtainable in no other make of wire line.

Let us show you how this protection is worth to you more than the line costs—and it costs nothing to get.

WILLIAMSPORT WIRE ROPE COMPANY

Main Office and Works: Williamsport, Pa.

General Sales Office: 122 S. Michigan Ave., Chicago, Ill.

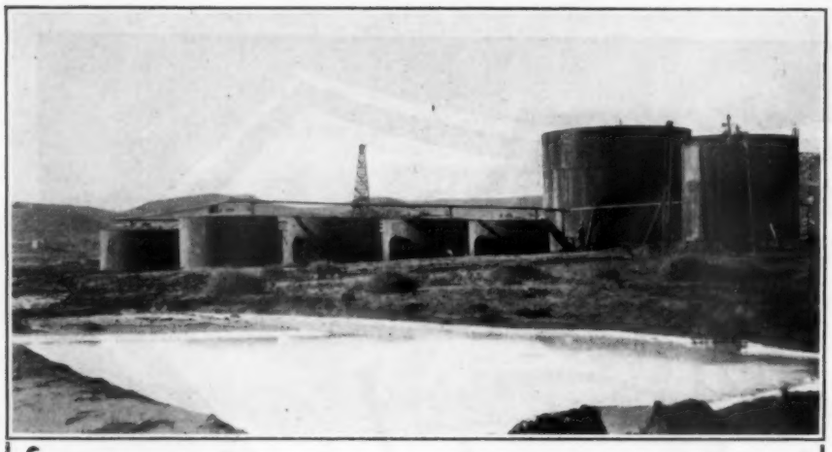
Oil Country Sales Offices: Williamsport, Bldg., Fourth and Midland Valley Tracks, Tulsa, Okla.

Distributors:

Houston Shidler Blackwell Ardmore Holdenville Bristow Wichita Falls
Smackover Arkansas City Shreveport Casper Lewiston Electra
San Antonio Seminole Borger Pampa Wink Odessa, Texas Maud, Okla.

Distributed by the Bridgeport Machine Company, Wichita, Kansas, and all of their Mid-Continent Branches

The Largest Exclusive Wire Rope Plant in America



DURABLE MALONEYS AT BORGER, TEXAS

Illustrated above are eight 250-barrel, two 3,000-barrel MALONEYS erected for the Japhet Production Company on Smith No. 4, at Borger, Texas. Like all MALONEYS, these tanks are assured of maximum life by manufacture of a remarkably durable material, Keystone Copper Steel.

MALONEYS are rendered exceptionally tight by our patented "crimp" seams and joints, packed with our pliable rubber gasketing and dressed with our Gaso cement. Seams are reinforced with rigid steel channels. Our oil heat treated bolts have a tensile strength of 90,000 pounds. Cleaning out plates are large and set flush with bottoms. We use the best valves and thief hatches the market affords.

"Alone in Quality"

MALONEY TANK MFG. CO.

TULSA, OKLA., U. S. A.

Distributors at All Principal Petroleum Points

Sizes: 12 to 10,000 Barrels

Packed in Steel-Bound Crates for Export

Howell Aluminum "4-in-1" Vacuum Pressure Valve and Thief-Hatch —The BEST and LATEST Deck Equipment—POSITIVE Safety

MADE OF KEYSTONE COPPER STEEL — MALONEY PATENTED BOLTED COPPER-STEEL TANKS — MADE OF KEYSTONE COPPER STEEL

MALONEY TANKS

"ALONE"

sd for winter at 4350 ft. Teton Pete, 30-46-64, spud in and dr ahead.

NEW MEXICO

CHAVES—Snowden & McSweeney, Merchant 1, ne 27-15s-23e, strrmg to 3458 ft. R. E. Neal et al, Russell 1, 21-14-25e, ur 1100 ft. Warman et al, 1, sw 23-13s-24e, stand 251 ft. Tanehill et al., 1, se 15-12-24e, ready to spud.

DE BACA—Matador Oil Co., State 1, sw 6-4n-20e, dr 627 ft. McAdoo 1, ne 16-1s-27e, ready to resume, sd 4190 ft. Transcontinental, McWhorter 1, 6-35-22e, casing trouble 860 ft.

GUADALUPE—Navajo Oil Co., Goard 1, 10-3n-17e, dr 3042 ft. Hanchett Oil Co., 2, 14-8n-24e, spud 95 ft.

LEA—Midwest Ref. Co., Farnsworth 19, 12-26-37e, fsh 3900 ft. Midwest, Farnsworth 13, 13-26-36, ready to spud. Marland, Eaves 1, 19-26-37, fsh tools 2969 ft.; Sholes 1, 19-25s-37e, fsh 3034 ft; Lynn 1, 26-23-36, coring at 3430 ft; Brooks 1, sw 8-20s-33e, dr 3660 ft; Reed 1, 22-20s-36e, dr 1805 ft; Meyers 1, 26-20s-37e, dr 3140 ft; Warren 1, 29-20-36e, dr 2400 ft; Lockhard 1, 31-21s-36e, dr 2040 ft; Slattery 1, 7-22s-34e; abn 4155 ft. Gypsy Oil Co., Mattern 1, 24-21s-36e, preparing to spud. Exploration Co., Record 1, 26-19s-35e, td 4556 ft. Morton et al, State 1, ne 32-11s-38, dr 1075 ft. Texas, Lynch 1, se 34-20-34, spud 70 ft; Sheppard 1, ne 6-26s-37e, dr 3180 ft; Cagle 1, se 9-26s-36e, dr 3400 ft; Humphreys 1, nw 18-20s-32e, location; Moberly 1, se 17-26s-37e, waiting on parts. Curtis Dr. Co., Nixon 1, 22-18s-34e, waiting on pipe, td 1150 ft. Cranfill & Reynolds, State 1, se 23-26s-36e, abn 3500 ft. Skelly Oil Co., Joiner 1, se 26-25s-36e, recement 10-in. at 3259 ft. Hill & Abel, Maetchel 1, sw 5-26s-33e, dr 2955 ft. Maljamar Oil & Gas Corp., Pearsall 2, 30-17s-32e, dr 3140 ft. Empire Gas & Fuel Co., State 1A, nw 12-21s-34e, waiting on pipe at 850 ft. Texas Pacific Coal & Oil Co., State 1, sw 22-23s-36e, dr 145 ft. Prairie O. & G. Co., Slattery 1, ne 22-22s-34e, ready to spud. Henderson et al, McDonald 1, se 18-20s-34e, dr 740 ft. Vacuum Oil Co. 1, 14-17-34, location. Ohio, State 1, 9-19-38e, moving in.

ROOSEVELT—J. T. Keegan et al, Pepper 1, 6-1s-36e, ready to build rig. Smith & Sloan, Lovern 1, se 4-3s-35e, location.

SAN JUAN—Continental Oil Co., Munoz 17, 2-29-19, sidtr tools, td 6338 ft. Dorothy Oil Co., 29-30-9, co 712 ft. Huerfano Oil Co., Wiltbank 1, 25-29-11, standing 800 ft. San Juan Pete Co., 1, 9-29-13w, sd 2950 ft. Kirtland Dr. Co., Hunt 1, 10-29-15, td 450 ft. Kutz Canon O. & G. Co., Day 1, 29-28-11, dr 547 ft. Blackrock Oil Co. 1, sw 11-25m-13w, sd temp 1550 ft. Iowa Oil Synd., Viles 2, 28-29-11, stand 870 ft. Angel Peaks Oil Co., Kutz Canon 1, 11-28-11w, dr 1455 ft. R. R. Burke et al, Deneen 1, 18-21-13, sd 1006 ft. Hall et al 1, 31-22n-13w, sd 507 ft. Milwaukee-New Mexico Synd., Beardsley 1, 30-28n-11w, sd 1100 ft.

SAN MIGUEL—E. Adams et al, Deason 1, 14-15n-16e, sd 1235 ft. Benedict-Wilson 1, ne 25-17n-16e, sd 800 ft.

SOCORRO—Arnold et al, 2, ne 13-6s-1w, dr 1367 ft.

TORRANCE—Bluhall O. & G. Co., 20-6n-10e, waiting on casing 1444 ft. Hall et al, Pinos Wells 1, sw 25-3n-13e, standing 400 ft. Sinnock et al, Kutchin 1, ne 13-7n-7e, spdg 45 ft.

VALENCIA—Acme Oil Co., New Mexico-Ariz. Land Co. 2, nw 13-6n-2w, wait on pipe 3145 ft.

TEXAS

SOUTHWEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
JIM HOGG COUNTY—		
T. J. Conway, Palacios 1	*	2320

BASTROP COUNTY—Sun Oil Co.'s Yost 1, Cedar Creek, fsh 1328 ft. Atlantic's Yost 2, Cedar Creek, testing serpentine at 1330-1467 ft; Yost 3, lcn. The Texas Co.'s Yost 1, Cedar Creek, set cas above serpentine at 1335 ft. Cranfill & Reynold's Yost 6, Cedar Creek, lcn. Gulf's Yost 1, Cedar Creek, ru. Gypsy Prod. Co.'s Lettman 1, c of Bastrop, sd 2145 ft. Jarmon et al's Barnett 1, Cedar Creek, drk. E. B. Germany's Stark 1, lcn.

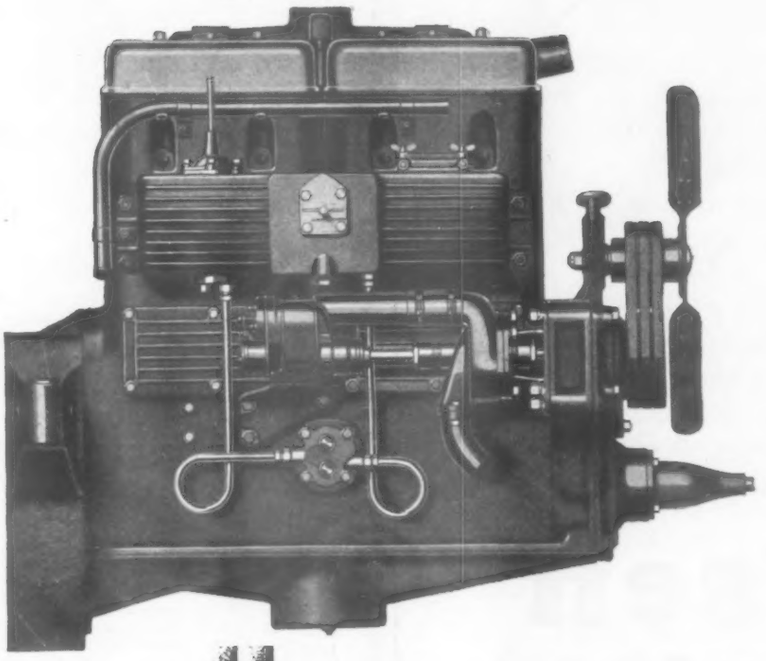
BLANCO COUNTY—Robt. A. Rodson's McDonald 1, sd 965 ft.

CALDWELL COUNTY—The Texas Co.'s Branyon 1-B, dr 2220 ft.

DUVAL COUNTY—Suns's Norton 2,

A new series. RED SEAL CONTISESTAL HEAVY DUTY ENGINES

Greater Power - Pronounced Economies



CONTINENTAL MOTORS — Powering the Nation — AMERICA'S STANDARD

Engine Model	No. Cyls	Bore and Stroke	Horsepower
Y2	2	3⅞" x 4¼"	8-14
H2	4	2½" x 4¼"	9-19
H9	4	3⅜" x 4¼"	14-33
S5	4	4¼" x 4½"	29-50
L4	4	4½" x 5½"	23-45
B7	4	5" x 6"	35-64
H15	4	4¾" x 6"	32-70
H16	4	5" x 6"	36-75
H21	4	5" x 6½"	39-81
H22	4	5¼" x 6½"	47-86
H23	4	5½" x 6½"	52-91
H24	4	5¾" x 6½"	60-97
H25	4	6" x 7½"	65-120
H26	4	6¼" x 7¼"	70-125
H27	4	6½" x 7½"	76-130
H28	4	6¼" x 7½"	82-136
32L	6	2⅞" x 4¾"	12-34
14C	6	3⅜" x 4⅜"	16-43
8B	6	3¾" x 5"	36-70
9T	6	4¼" x 5¼"	50-85
28H	6	4½" x 5¾"	65-105
20R	6	4⅜" x 4¾"	27-88
18R	6	4" x 4½"	25-81.5
P10A	2	3⅜" x 4¼"	8-14
P11	4	2½" x 4¼"	9-19
P20	4	3⅜" x 4¼"	14-33
P35	4	4¼" x 4½"	29-50
P56	6	3¾" x 5"	36-70.5
P75	6	4¼" x 5¼"	50-85
P96	6	4½" x 5"	66-105
P11A	4	2½" x 4¼"	9-19
P20A	4	3⅜" x 4¼"	14-33
P35A	4	4¼" x 4¼"	29-50
P52	4	5" x 6"	32-64
P56A	6	3¾" x 5"	36-70.5

THE new H series Heavy Duty Slow Speed Continental Engines are a notable addition to the Continental industrial family.

Adapted for the demands of every industrial use they give the characteristic Continental stability and dependability, plus added power and economy.

Features such as overhead valves, removable sleeves, large crankshaft, with five main bearings, dry sump oiling system and built-in governor, insure longer motor life and powerful performance.

The H series Heavy Duty Engines are outstanding for power capacity and day in and day out service.

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CONTINENTAL MOTORS CORPORATION
INDUSTRIAL EQUIPMENT DIVISION
Office and Factory: Muskegon, Michigan
The Largest Exclusive Motor Manufacturer in the World

Continental Engines

Say you saw it in The OIL WEEKLY

Deep Stuff—

If you want a Jack of giant strength to lift oil from 3000 feet through 3 inch tubing or from a much greater depth through 2 inch, send for complete information about our Titan No. 7, with a practical stroke of five feet. It has an absolutely straight, vibrationless lift that eliminates all stuffing box troubles and adds greatly to the life and efficiency of other equipment above and below ground. Heavyweight champion of the world, but extremely easy to pull. For catalog of our complete line, including Electric Pumping Jacks, address Jensen Brothers Manufacturing Co., Coffeyville, Kansas.

Jensen Jacks

NATIONAL PETROLEUM ENGINEERING COMPANY
Engineers & Geologists
TULSA, OKLAHOMA

APPRAISALS
REPORTS-COMMERCIAL & TAX

SURVEYS
ESTIMATES OF OIL RESERVES

AN EXPERIENCED OIL FIELD ORGANIZATION

Schoolfield O'Byrne field, dr 1840 ft, shale; Davois 1, drk. R. Driscoll's Fee 13, testing at 2475 ft. O. Henry Oil Co.'s Henry 1, blk 1879, Snodgrass subdiv., dr 650 ft shale.

EDWARDS COUNTY—McMan Oil Co.'s Schriener 1, ne part of county, td 3890 ft. Seagle Oil Co.'s Neal 1, 3 mi nw Barkdale, sd 40000 ft.

GUADALUPE COUNTY—Magnolia's Adams 1, e Seguin, dr 2665 ft chalk.

GONZALES COUNTY—The Texas Co.'s Bateman 3, A. Zumwald sur, drk. Cranfill & Reynolds' Webb 1, Ottine area, drk.

HIDALGO COUNTY—Queen City O. & G. Co.'s Amer. Land & Irrig. Co. 2, 3 mi n Mercedes, sd 700 ft.

JIM HOGG COUNTY—T. J. Conway's Palacios 1, abn at 2320 ft.

JIM WELLS COUNTY—Cushing Oil Co.'s Perez 2, 3 mi n Alice, sd 2700 ft.

KINNEY COUNTY—Stephens et al's Clamp 1, fsh 2250 ft.

MAVERICK COUNTY—Rycade Oil Corp.'s Sullivan 3, se Eagle Pass, dr 4765 ft lime. Chittim 2, se Eagle Pass, fsh 7635 ft; Chittim 3, se Eagle Pass, dr 210 ft. Ryan Consolidated Pet. Corp.'s Indio Co. 2, 24 mi se Eagle Pass, td 1320 ft.

NUECES COUNTY — Maddox-Horn-Davis' Ragland 1, Aqua Dulce, dr 880 ft in shale. Sigmond et al's Allan 1, sd 2850 ft. Rosenblum & Grimm's Alban 1, Aqua Dulce, sd 2830 ft.

SAN PATRICIO COUNTY—LaPrelle et al's White Point 1, sd 3130 ft. Pickett et al's Whitworth 1, White Point, sd 3250 ft. Leach et al's Collins 1, Mathis, td 2422 ft.

STARR COUNTY—The Texas Co.'s Resendez 1, dr 3280 ft.

WEBB COUNTY—Baku Oil Co.'s Bruni 1, blk 7, sur 735, sd 2510 ft. C. S. Lumpkin's H. Yeager 1, blk 17, Fansler subdiv., porcion 33-34-35, lcn.

SOUTH LOUISIANA
Completions

Company, Well and Location	Initial Production Bbls.	Depth
IBERIA PARISH—		
La. Oil & Gas Co., Bernard 1, New Iberia	65	2630
WEST FELICIANA PARISH—		
Robinson & Long, Raccourci 1	*	3000

ACADIA PARISH—E. F. Simms' Clement 1, Jennings, sd 3872 ft; Clement 2, Jennings, sd 3840 ft; Grace Von Schueler 1, Jennings, dr 4370 ft hard sand; Jennings Oil Co. 1, Jennings, sd 3545 ft; Cockrell 1, Jennings, sd 4330 ft.

ASCENSION PARISH—Gulf's United Lands Co. 13, Sorrento, dr gbo at 1165 ft. Triumph Oil Corp.'s J. D. Lacey et al 2, 1& mi se Sorrento, sd 1100 ft. Burnside Oil Co.'s Roberts 1, td 785 ft. Big Dome Drlg. & Dev. Co.'s and J. S. Kimbrough's Rearwood 1, dr 1000 ft gbo. Baton Rouge Pet. Co.'s Liotta 1, sd 1000 ft.

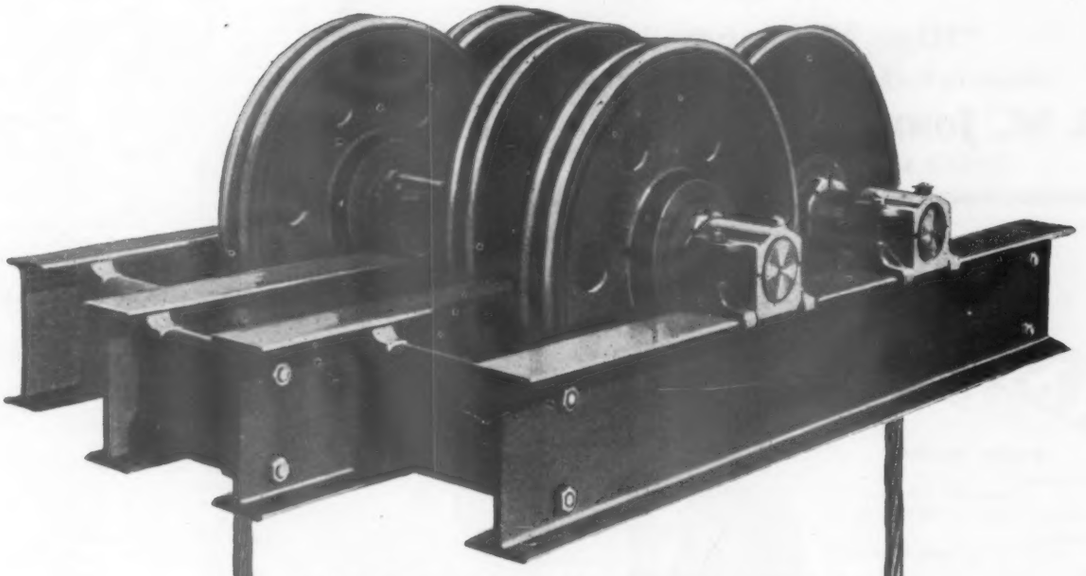
CALCASIEU PARISH—Union Sulphur Co.'s Fee 729, Sulphur, drk; Fee 733, Sulphur, dr 5937 ft shale; Fee 735, Sulphur, prep to deepen from 4275 ft; Fee 736, Sulphur, dr 645 ft sand; Fee 737, Sulphur, dr 3172 ft sand; Fee 738, Sulphur, gas blowout at 2850 ft, drk wrecked, may abn; Fee 739, Sulphur, ru; Fee 740, Sulphur, dr 2870 ft rock. J. W. Watson et al's La. Land Co. 1, Sulphur, dr 5042 ft sand.

CAMERON PARISH—Pure Oil Co.'s Yount-Lee Oil Co. 7, Sweet Lake, dr 4104 ft sand and shale. Yount-Lee 8, Sweet Lake, dr 3202 ft sand and shale. Calcasieu Oil Co.'s Breaux 1, Kelso Bayou, dr 4340 ft sandy shale. The Texas Co.'s Calcasieu Lake B-4, East Hackberry, lcn; Calcasieu Lake A-3, South Calcasieu Lake dome, lcn. Rycaed Oil Corp.'s Yount-Lee 1, Hackberry, dr 3710 ft shale and lime. Yount-Lee Oil Co.'s Perkins 1, Hackberry, ru; School Land 8, Hackberry, dr 4175 ft hard sand. Cameron Oil Co.'s Benson Vincent 1, Hackberry, fsh 2820 ft. John D. Dickson's Dubon 1, lcn. Shell Pet. Corp.'s Watkins 5, Black Bayou dome, sd 1320 ft; Watkins 6, Black Bayou dome, dr 1700 ft lime.

IBERIA PARISH—La. Land & Explo. Co.'s Vermillion Bay A-3, td 3200 ft. La. Oil & Gas Co.'s Bernard 1, New Iberia, flowing 65 bbls oil at 2630 ft. Gulf's La. State Z-8, Loreauville, ru; Fannie Kling et al 3, Loreauville, dr 2162 ft gbo.

IBERVILLE PARISH—Shell Pet. Corp.'s Wilbert 3, White Castle, dr 450 ft sand and

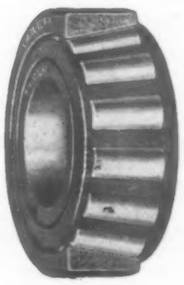
Timken Bearings in the "Gumbo Buster"



Who knows most about shock, thrust, speed and the radial loads in a crown block? The maker knows that these things must be reckoned with. The user need only know that they are entirely overcome in such leading makes as the "Gumbo Buster" by the use of Timken Bearings.

There is no secret about the increased work capacity and longer life of Timken-equipped oil field machinery. These superiorities are attested by this one *big* fact —there are more Timken Bearings in the oil fields than all other anti-friction types combined.

Anti-friction, anti-power loss, anti-wear; Timken Bearings are all of these. So smooth and easy is the rolling action of Timkens that lubrication is required only at infrequent intervals.



The reason the American Well and Prospecting Company, Corsicana, Texas, and so many others use Timkens is because this is the surest way to the results assured by the exclusive Timken combination of Timken tapered construction, Timken *POSITIVELY ALIGNED ROLLS* and Timken electric steel.

THE TIMKEN ROLLER BEARING CO., CANTON, O.

TIMKEN *Tapered Roller* **BEARINGS**

Say you saw it in The OIL WEEKLY

There is Over 3,000,000 Feet of

JONES A. P. I. SPECIFICATION **SUCKER RODS**

Now In Use

"High Manganese" RODS

Made in Both Box and Pin and Double-Pin Types

S. M. JONES COMPANY, Toledo, Ohio

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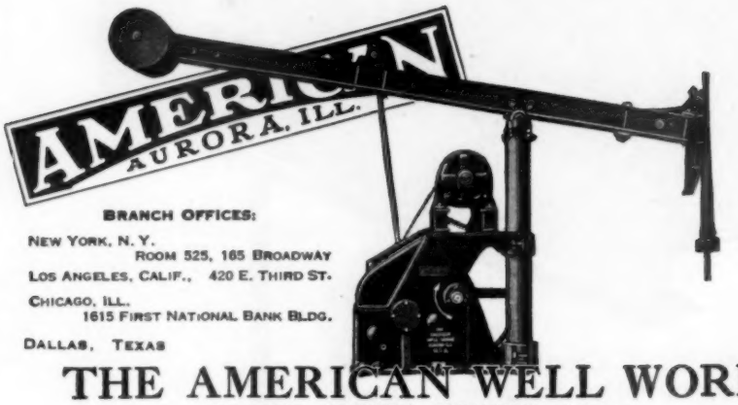

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THE AMERICAN WELL WORKS
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Is the Reason

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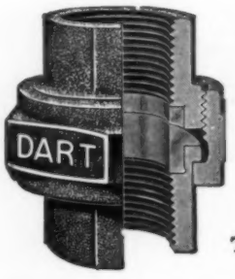

CARBON (BLACK DIAMONDS) FOR DIAMOND CORE DRILLS

—IMPORTERS—
INDUSTRIAL DIAMONDS
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DIAMOND POINTED TOOLS FOR ALL MECHANICAL PURPOSES

WRITE OR WIRE FOR CATALOGUE AND FULL PARTICULARS
THE DIAMOND DRILL CARBON CO.
PARK ROW, NEW YORK, N.Y. CABLE ADDRESS, CREDOTAN, N.Y.

gravel. Standard of La.'s Wilbert 2, Bayou Blue dome, driving piling for drk; Schwing 1, Bayou Blue dome, spudded. Union Sulphur Co.'s Schwing 3, Bayou des Glaise, dr 3100 ft sand.

LA FOURCHE PARISH—Gulf's Stark et al 8, Thibodaux, fsh 1260 ft.

ST LANDRY PARISH—The Texas Co.'s Botany Bay Fee 1, dr 1682 ft gbo.

POINTE COUPEE PARISH—Miller et al's Kornbacker 1, sd 1925 ft.

ST. MARTIN PARISH—Rycade Oil Corp's State 3, Bayou Bouillon. lcn; Bayou Bouillon 5, td 3755 ft; Bayou Bouillon 6, ru; Atchafalaya Fee 3, Bayou Bouillon, cor sand at 4146 ft; Atchafalya Fee 4, Bayou Bouillon, dr lime and sand at 4097 ft; Atchafalya Fee 5, Bayou Bouillon, drk. Ohio Oil Co.'s Martin et al 3, Hager dome, dr 4025 ft gbo. Yount-Lee Oil Co.'s La. Pet. Co. 3, Anse la Butte, dr 4150 ft sand.

ST. MARY PARISH—J. Dannenbaum et al's Le Blue 1, Charenton, sd 3015 ft.

ST. TAMMANY PARISH—Pearl Oil Corp.'s Fritsche 1, Slidell, set cas at 1825 ft.

TANGIPAHOE PARISH—Tanli Oil Co.'s Weinberger 2, dr 4050 ft shale.

TERREBONNE PARISH — Southern Gas Co.'s Peoples Sugar Co. 1, Houma, sd 2287 ft.

WEST FELICIANA PARISH—Robinson & Long's Raccourci 1, abn at 3000 ft.

TEXAS GULF COAST

Completions

Company, Well and Location	Initial Production Bbls.	Depth
JASPER COUNTY—		
Great Lakes Oil Co., Boykin 3, 3 mi ne Rockland	25	1268
L. A. Painter, Boykin 1, 3 mi ne Rockland	*	1390
WASHINGTON COUNTY—		
Sun Oil Co., F. Grote 1, wo, Clay Creek	600	1357

AUSTIN COUNTY—Humble's Hardy 2, Raccoon Bend, dr 1070 ft hard shale; A. Grawunder C-1, Raccoon Bend, dr 2139 ft shale and lime; Beal 1, Raccoon Bend, completed for 300 bbls on ⅜-inch choke at 3558 ft; Walton 2, Raccoon Bend, preparing to test sand at 2226 ft; Urban 2, Raccoon Bend, driving piling in crater; Urban 3, Raccoon Bend, sd 198 ft; J. W. Wilson 1, Raccoon Bend, ru; E. Kearnes 2, Raccoon Bend, lcn; E. B. Wilson 2, Raccon Bend, dr 428 ft shale. H. D. Brown's Brazos River 1, lcn.

BRAZORIA COUNTY—Shell Pet. Corp.'s Allen 5, Allen Dome, dr 4100 ft shale; Reese 3, Allen dome, sdtrk at 2220 ft. Myer et al's Davidson 1, Clemens Dome, sd 1050 ft. F. A. Bartlett's Dannenbaum 8, Stratton Ridge, sd 3145 ft.

CALHOUN COUNTY—Baker & Thompson's Thomas 1, 9 mi w Pt. Lavaca, dr 2390 ft gbo.

CHAMBERS COUNTY—Pure Oil Co.'s Lost River 2, Lost Lake, dr cap rock at 3709 ft; Lost Lake 2, Lost Lake, dr 2072 ft lime. Gulf's Wilborn 1, Anahuac, dr 2730 ft gbo. Mills Bennett Prod. Co.'s Kirby 2, Barbers Hill, set 6⅝-inch cas at 5300 ft; Smith 2, Barbers Hill, ru. Humphreys Corp.'s Kirby C-1, Barbers Hill, comp. for 2500 bbls at 5231 ft. Kirby B-6, Barbars Hill, dr 4880 ft lime. Yount-Lee Oil Co.'s Chambers Co. 1, Barbers Hill, cor sand at 4700 ft; Richardson 2, Barbers Hill, dr 1961 ft gbo.

COLORADO COUNTY—Rich Oil Corp.'s Brun 1, 3 mi ne Columbus, sd 1215 ft. The Texas Co.'s Kveton 1, Cat Springs, ru.

FAYETTE COUNTY—Phalen et al's Cervanca 1, 6 mi s La Grange, dr 2782 ft gbo. Moore et al's Kerr 1, Muldoon, sd 2078 ft. National Oil Co.'s Melcher 1, Plum, spudded.

FORT BEND COUNTY—Sun Oil Co.'s E. C. Farmer 4, Boling, dr 3130 ft lime; Kasparek 4, Boling, dr 3965 ft shale. Fort Bend Oil Co.'s Moore 1, Orchard, sd 3690 ft. Boling Dome Oil Corp's Armstrong 1, Boling, dr 3280 ft gbo and shale. Humble's Dew 1, Sugarland, completed for 1500 bbls on ½-inch choke at 3591 ft; Sugarland Industries 4, Sugarland, coring sand at 3648 ft; Deathridge 2, Sugarland, dr 779 ft sand and boulders; Nelson 1, Sugarland, waiting on cement to set, td 3044 ft; Camp 1, Sugarland, ru. J. H. Diehl's Armstrong 1, 2 mi e Boling, sd 500 ft. South Texas Explo. Co.'s Hartfield 1, Needville, dr sand at 4720 ft.

GALVESTON COUNTY—Long et al's Ir-

PERFECTION Core Barrel

The Mechanical hand that *never* fails

Into the hole it goes. And each time you know you can always depend on the *heat treated* Chrome Nickel Steel cutter head, faced with *Stellite* to bring up the core you want. Just before the barrel is rotated to cut the core, a ball is dropped through the drill stem to cut off the water that has been keeping the barrel clean on its way down. Perfection cores are *clean*.

When the core is taken and the barrel back up on the derrick floor, it takes *two minutes* to remove the Split Liner (a patented feature) and take the core out—unbroken.

It has never failed to deliver a perfect core in record time. Write today for list of prominent users and catalog.

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A recent dispatch from Venezuela says a Sullivan "P-2" has just brought in the cheapest wildcat test well in that country. From the spudding-in to the finish at 4350 feet, only 5 months and 9 days elapsed, 47 days of which were lost due to a flood, and to cementing and testing. The actual drilling was done in 2½ months.

At 1956 feet, 8¼-in. casing was set—at 3051 feet, 6¼-in.—and at 3467 feet, 4¾-in. A 4¼-in. hole was bored, and core taken from this point down to 4350 feet, where oil was struck. The same company is now drilling a second well with this Sullivan Diamond Drill, and have set 170 ft. of 16½-in. casing, and 1006 feet of 11¾-in.

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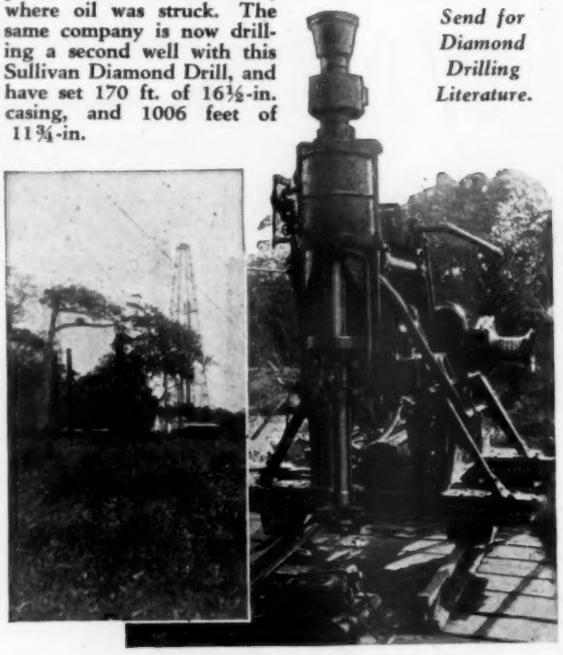

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vin & Bishop 1, 2 mi s Dickinson, sd 4322 ft. Republic Prod. Co.'s Lobit 1, 1 mi nw Dickinson, sd 3815 ft.

GOLIAD COUNTY—Alexander et al's Bergman 1, Goliad Townsite, td 600 ft. McCarson et al's Flake 1, Goliad Townsite, spudded. Southern Crude's J. L. Pettus 1, 10 mi nw Goliad, preparing to test sand at 3160 ft.

HARDIN COUNTY—Chappel Hill Oil Co.'s Hale 1, 5 mi nw Sour Lake, sd 1810 ft. Guedry Drlg. Co.'s Guedry 1, 3 mi s Batson, drk.

HARRIS COUNTY—Torsen et al's Stewart 1, 4 mi sw Genoa, sd 691 ft. Hunt et al's Lobit 1, 4 mi n Goose Creek, sd 2145 ft. Humble's Warren 5, Hockley, td 1060 ft, moving in new drk; Minnetex 1, Mykawa, dr 5029 ft sandy shale; Simms-Smith 74, Humble, dr 6369 ft hard sand. The Texas Co.'s House 22, Humble dr 2961 ft shale and boulders. Cedar Bayou Oil Co.'s Johnson 1, 8 mi n Goose Creek, dr 982 ft gbo. Paxton et al's Brubacker 1, 1 mi ne Clodine, dr 982 ft gbo. Mrs. J. C. Baldwin et al's Kitzman 1, 2 mi n Cypress, dr 2900 ft. Brains et al's Lentze 1, 4 mi s Tom Ball, sd 1120 ft.

JASPER COUNTY—Great Lakes Oil Co.'s Boykin 3, 3 mi ne Rockland, completed at 1251-68 ft for initial of 400 bbls fluid and 25 bbls oil. Tar Well Oil Co.'s Mills 1, 3 mi ne Rockland, dr 1980 ft gbo. L. A. Painter's Boykin 1, 3 mi ne Rockland, abn at 1300 ft.

JACKSON COUNTY — The Texas Co.'s Moore 1, Edna, dr 2860 ft shale. Wright Bros.' Classen 2, Edna, dr 3260 ft. Douglas & Lawrence's Lawrence 1, Edna, sd 3020 ft.

JEFFERSON COUNTY—Deep Test Oil Corp.'s Faith McFaddin 1, 6000 ft e Spindle Top, sd 2850 ft. So. Spindle Top O. & Dev. Co.'s Young 1, 1 mi w Nederland, sd 3425 ft. Beaumont Oil Co.'s Tyrrell 1, 2 mi w Brooks, drk. Westbury Synd.'s West 1, 1 mi ne Westbury, dr 2538 ft gbo and lime. Gulf's Burrell et al 2, Fannette, dr 5620 ft sand and shale. River Oil Co.'s Ship Channel Land Co. 1, 2 mi se Beaumont, dr 632 ft gbo. Bleakie Oil Co.'s Tollivar 1, 2 mi northeast Westbury, ru. The Texas Co.'s Pipkin & Davis 1, Big Hill, dr 2982 ft hard sand.

LAVACA COUNTY—The Texas Co.'s Russick 1, 6 mi s Ezell, ru.

LIBERTY COUNTY—Barlow et al's Hinchcliff 1, 2½-mi ne Cleveland, sd 2215 ft. Kouri et al's Campbell 1, 6 mi s Cleveland, sd 2000 ft. Big Dome Interests' Finley 2, 3 mi nw Hardin, drk. The Texas Co.'s Davis 1, Davis Hill, may abn at 4640 ft. Humble's Sterling 3, Moss Bluff, sd 2956 ft. Sun Oil Co.'s Koveleika 1, N. Dayton, dr 3970 ft shale. Union Explo. Co.'s Esperson 1, 5 mi s Dayton, coring rock at 6650 ft.

MATAGORDA COUNTY—Rycade's Hudson-Humble 4, Markham, dr 420 ft sand. Crossland et al's Hawkins 1, Shepherds Mott, dr 2380 ft gbo. Dr. P. S. Griffith's Culver 1, e Citrus Grove, sd 3215 ft. Baer 1, 1½ mi n Gulf Hill, sd 1900 ft.

ORANGE COUNTY—Veteran Oil Co.'s Reed 1, 2 mi se Orange field, td 2072 ft.

VICTORIA COUNTY—Houston Oil Co.'s Kyle 2, ½ mi e Nursery, dr 860 ft gbo. Houston Oil Co.'s Kyle 2, e Nursery, dr 860 ft gbo.

WASHINGTON COUNTY—Sun Oil Co.'s Mrs. J. Grote 1, Clay Creek, dr 515 ft shale; F. Grote 1, Clay Creek, completed for 600 bbls at 1357 ft; Marcus 1, Clay Creek, dr 3090 ft shale; Einman 1, Clay Creek, sdtrk at 2430 ft; Schirmer 2, Clay Creek, lcn; H. Witt 1, Clay Creek, spudded. Davis et al's Seward 1, ½ mi n Independence, dr 1100 ft shale.

NORTH LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
BOSSIER PARISH—		
Doern et al's Bolinger 1, 9-22-11...	*	4317
DE SOTO PARISH—		
R. O. Roy, Whittaker 1, 4-13-13...	*	2950
WEBSTER PARISH—		
Magnolia Pet. Co., H. H. Branton 1, 5-22-9	¶5½	2706

BIENVILLE PARISH—W. G. Gray, Tr's Johnson 1, 21-19-6, dr 2635 ft. W. P. Wallace's Ashley 1, 15-16-10, arr d.s. test, td 2005 ft.

BOSSIER PARISH—Big Ben Oil Co.'s Stewart 2, 15-18-12, sd 1300 ft. Doern et al's Bolinger 1, 9-22-11, salt water, abn, td 4317 ft. Nell & Lainer's Biedenharn 1, 23-21-14, rig up. Walker et al's Antrim 1, 28-22-13, sd wo 2985 ft.

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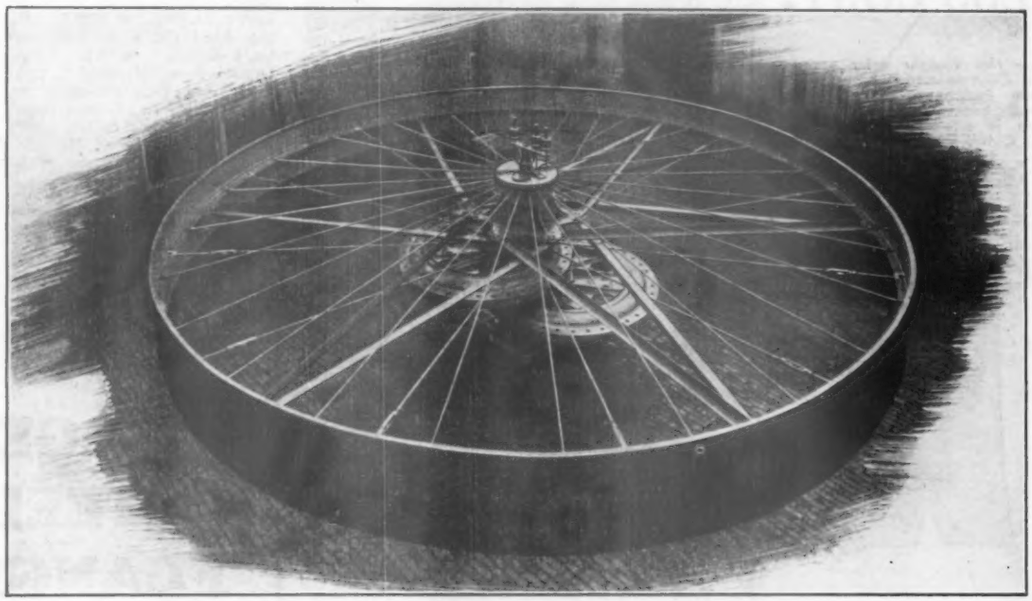

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(Patent Applied For)

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BEAUMONT, TEXAS

Ark. Nat. Gas Corp.'s Tidwell 1, 29-22-11, dr 50 ft.

CADDO PARISH—D. C. R. Oil Co.'s Hunter Est. 1, 17-19-14, rig up.

CATAHOULA PARISH—Lochnager O. & G. Co.'s Taliaferro 1, 26-9-6e, sd 900 ft.

CLAIBORNE PARISH—Dixie Oil Co.'s Gilbert 1, 27-21-5w, sd wo 4517 ft. El Dorado Chief Oil Co.'s Baker 1, 26-20-7, sd 2092 ft. Smitherman & McDonald's Miller 1, 17-23-8, cmtd 6⅝-in csg td 4190 ft.

DE SOTO PARISH—Benedum & Trees' State 1, 22-14-12, arr to swab td 2833 ft. Tjorn Oil Co.'s Burford 1, 22-14-14, dr 700 ft. Warren & Carruthers' Ramsey 1, 33-13-16, dr 2482 ft. R. O. Roy's Sample 1, 1-13-14, rig up. Whittaker 1, 4-13-13, salt water abn, td 2950 ft. Benson O. & G. Co.'s Jackson 1, 3-10-13, rig up. Luke Case, Tr's Boatright 1, 3-10-13, sd rebldg dk, td 1810 ft. Carlton Drilling Co.'s Stephens 2, 12-11-16, temp abn 350 ft.

EAST CARROLL PARISH—Palmer Corp.'s Mitchiner 1, 8-19-11e, dr 1820 ft.

FRANKLIN PARISH—Davis et al's Moore 1, 12-11-6e, sd wo 1000 ft.

MADISON PARISH — Mid-American Pet. Co.'s Yerger 2, 51-16-14e, sd 285 ft.

MOREHOUSE PARISH—Woodley & Collins' Harp 1, 23-22-7e, dk.

NATCHITOCHES PARISH—Robeline O. & G. Co.'s Cassady 1, 7-8-9w, sd wo 1100 ft.

OUACHITA PARISH—G. E. Jordan's wall 1, 12-18-3e, plugged back to 2300 ft, wting on cmt, td 3347 ft. Ouachita Nat. Gas Co.'s D'Arbonne B-2, 25-19-2e, sd 3349 ft. Phillips et al's School Fee 1, 16-16-10, dr 2650 ft.

RAPIDES PARISH—G. E. Silbertson's Willemach 3, 13-5n-4w, sd 2250 ft. Glenmora Pet. Co.'s Fee 1, 1-2n-2w, sd 3850 ft.

RICHLAND PARISH — Richland Operating Co.'s Chapman 1, 19-16-7e, dr 50 ft.

SABINE PARISH—W. J. Garnier's Bowman-Hicks 1, 16-7-12, sd wo, 625 ft. R. L. Gay, Tr's Bowman-Hicks 2, 14-7-14, rig up. Sabine Lbr. Co. 1, 13-7-14, dr 250 ft.

TENSAS PARISH—Enochs et al's Curry 1, 39-11-12e, sd 3583 ft.

UNION PARISH—G. E. Carmatte's Tugwell 2, 21-22-1e, dk. Carter & Wingfield's Clark A-3, 8-23-1e, dk. Hudson 2, 7-23-1e, sd wo 2278 ft. Hudson 3, 7-23-1e, sd wo 2278 ft. Security Trust 2, 7-23-1e, lcn. H. C. McDonald's Union Sawmill 2, 18-23-1e, sd wo 1500 ft.

WEBSTER PARISH — Magnolia Pet. Co.'s Denman 1, 1-22-11, rig up. H. H. Branton 1, 5-22-9, 5,499,000 ft gas, td 2706 ft. Scroggins 1, 22-11, will pump, td 2709 ft. Robt. Elmore's Mitchell 1, 31-23-9, cemtd 6-in csg, td 2604 ft. Jones et al's Elkins 1, 33-23-9, temp abn, td 2690 ft. Harry Morris' Lewis 1, 15-23-9, sd wo 2902 ft. Northwest La. Gas Co.'s Pinewoods Lbr. Co. 9, 37-23-11, dr 2700 ft.

ARKANSAS

Completions

Company, Well and Location	Initial Production Bbls.	Depth
UNION COUNTY—		
Tate & Morefield, W. W. Smith 1, 6-18-13	*	3302
OUACHITA COUNTY—		
Little Fay Oil Co., H. Primm 3, 24-15-16	30	2084

ASHLEY COUNTY—Texas Co., Keifer 1, 11-18-4, rig up. C. E. Harris et al, Holmes 1, 9-16-7,sd 151 ft.

BRADLEY COUNTY—Ohio Oil Co., Sou. Lbr. Co. 2, 19-16-9, dr 2136 ft.

CALHOUN COUNTY—Joe Hurley. Ark. Land & Timber 1, 29-16-12, cemtd 6⅝-in cas 2303 ft, td 2314 ft.

CLARK COUNTY—Wm. Henry, Tr., Clark 1, 34-9-21, sd 1385 ft.

CHICOT COUNTY—W. S. Smith's Meyer 1, 14-19-2, sd 850 ft. Joe Crawford, Cashion 1, 14-18-2, ds stuck td 2330 ft.

COLUMBIA COUNTY—G. W. Dawley et al, Fullenwider & Kitchen 1, 12-17-22, sd wo 2847 ft.

DALLAS COUNTY—Robt. H. Dedman's Hillman 1, 20-10-13, temp abn 1145 ft.

FAULKNER COUNTY—Gold Creek O. & G. Co. Stermer 1, 17-4-13, sd 3462 ft.

FRANKLIN COUNTY—Ozark Nat. Gas Co., McElroy 1, 15-8-27, lcn.

GARLAND COUNTY—H. H. Givens, Garrett 1, 1-13-19w, temp abn 2800 ft.

LOGAN COUNTY—Ark. Nat. Gas Corp., W. H. Parks 1, 26-8-24, trying to set 6⅝-in cas td 3208 ft.

MILLER COUNTY—E. A. Martin, Tr., Dale 4, 23-15-26, dr 2425 ft.

OUACHITA COUNTY—McDonald Bros., Wilson 1, 25-15-18, ran testing tool 2788 to 2806 ft, stuck tool and ds trying to work over ds with 6⅝-in cas. Little Fay Oil Co.'s Canada 1, 24-15-16, cemtd 6⅝-in cas 2017 ft. Canada 2, 24-15-16, dk. H. Primm 3, 24-15-16, pumping 30 bbls td 2084 ft.

UNION COUNTY—Frazier et al's Laney 1, 30-19-16, dk pat. Carter Bell et al's Terrell 1, 27-18-14, rig up. J. P. Hawkins et al's Goodwin 1, 6-17-15, sd 616 ft. Tharpe Drilling Co.'s List 1, 25-17-15, sd 3050 ft. Foster et al's Murphy Land Co. 1, 22-17-17, rig up. Calgo Oil Co.'s Primm 1, 9-18-17, sd wo 3600 ft. McDonald Bros.' Mayfield 1, 29-19-15, sd 1990 ft. Sam Sklar, Tr.'s Fitzgerald 10, 8-18-15, cemtd 6-in cas 2142 ft. Grimes Bros.' Hill 2, 7-18-14, rig up wo. Tate & Morefield's W. W. Smith 1, 6-18-13, dry abn td 3302 ft. J. C. Marcum's DeYambert 1, 5-19-4, sd 2672 ft.

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Say you saw it in The OIL WEEKLY

Equipment for Drilling Exploration Wells by the Rotary Method

By WENDELL M. JONES
Petroleum Equipment Company, Los Angeles

Paper read before annual meeting of the American Petroleum Institute, Chicago, December 6, 1928

ABSTRACT

CAREFUL selection of equipment for the drilling of exploration wells is as important as the geologists work in selecting the site to be drilled. Geological theories cannot hope to bear fruit except in a very small percentage of cases, but with the improved types of equipment now on the market, there is little excuse for failure of "putting down the hole." Factors which should influence choice of equipment are discussed herein. Portable types of rotary drilling equipment available for shallow drilling, and the new types of heavy rotary drilling equipment are described. That the automatically controlled electrical drilling outfits and the hydraulic feed outfits are especially adapted to exploration work is being recognized. Proper power selection may effect a substantial saving in the cost of drilling.

The high first cost of the newer and heavier drilling machinery and miscellaneous equipment is usually justified both because of the added assurance of completing the hole to the planned depth and the increased speed of drilling made possible.

FOREWORD

The fulfillment of the geologist's dream, the insured drilling of a well to any reasonable depth he may wish, is soon to be realized. To the proper construction, selection, and application of equipment for exploration drilling, can be given much of the credit for the recent discovery of numerous new oil fields. The use of poor or improper equipment has prevented many operators from being rewarded by the successful completion of their "wildcats." Prolific oil structures have been condemned and abandoned only to be discovered later when drilled properly and to the correct horizon. Perserverance, use of good equipment, and faith in the geological data at hand has recently resulted in the discovery of what may prove to be California's greatest field, and this in an area that has been wildcatted unsuccessfully for many years.

CABLE TOOL VS. ROTARY METHODS

While the rotary method of drilling has practically replaced the cable tool method in certain districts, it is conceded that cable tools may still have advantages in others. Where holes can be drilled open and dry, or where considerable lime or flinty formations must be penetrated, economies in drilling by the cable tool method may be effected. The recent development of percussion core bits for use with cable tools has in part overcome the objectional features of bailer samples. However, the rotary core bit in most cases gives the geologist a much truer cross-section of underground conditions than cuttings, or even cores by the percussion or cable tool method. Where first cost of equipment is of major importance, the depth to be drilled is less than 2000 feet and formations are suitable, portable cable tool rigs, such as the Star, National, and Leidecker types, have their place.

Because of the great interest in the subject of exploration with the rotary method of drilling, this paper will discuss only this type of equipment. It is an established fact that with the use of improved types of rotary machinery and bits, any known type of formation can be drilled.

FACTORS TO BE CONSIDERED

The proper selection of equipment for drilling involves consideration of many factors, some of which are scientific conjectures and some of which are determinable facts. Of prime importance under this first heading are the geological theories and data upon which the location of the proposed test hole was chosen. These give the proposed depth to be drilled and the probable character and thickness of the formations to be penetrated. The geographical location is important under the second heading. This usually determines the mode of transportation, which is a vital factor, and the availability of electricity, oil or gas fuel, and water. Proximity of repair shops and other service facilities also will affect equipment selection.

With a knowledge of these factors at hand, the problem is the selection of equipment best suited for drilling and testing the particular structure to a specified depth.

Before any equipment is selected the entire proposed program should be definitely outlined and placed in the hands of the field superintendent charged with the responsibility of drilling the hole. This outline should give:

1. Exact location to be drilled.
2. Number of test holes to be drilled.
3. Time drilling must start and an estimate of drilling time.
4. Proximity to railroads, highways, waterways, and cities.
5. Available sources of power, electricity, gas, and oil.
6. Available water supplies, their quantity and quality.
7. Topoghaphical features of rig sites.
8. Proposed depth to be drilled.
   a. Expected depth of hole from geological information.
   b. Maximum possible depth in case of failure under 8-a.
9. Proposed casing schedule.
10. Character and thickness of formations apt to be penetrated.
11. Possible horizons to be cored and tested.

PORTABLE OUTFITS

While experience with portable and semi-portable rotary outfits is as yet limited, some very good equipment has

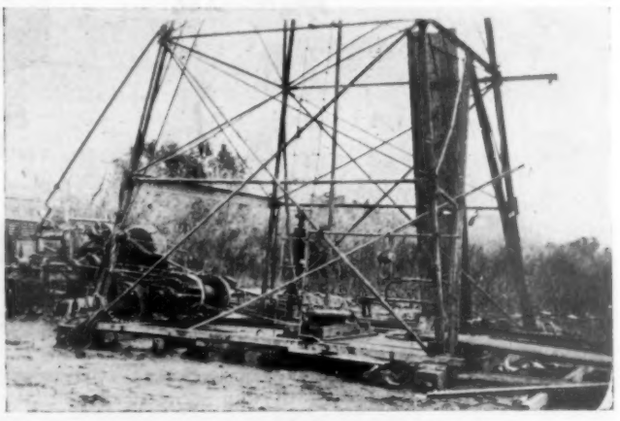

FIGURE 1

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been developed and used with success. These outfits lend themselves particularly to localities where the depth to be drilled is under 3000 feet and several test holes are to be drilled with the outfit in the same area. Rigging-up costs with portable units are only about one-fourth that of rigging the regular types.

In Texas, small portable rotaries have been developed which have shown remarkable economies in drilling shallow holes. An interesting example of an outfit used by a small operator near San Antonio is cited. This outfit, designed to drill up to 1500 feet, cost $5,750 complete, including a 50-horsepower four-cylinder gasoline engine, 4¾-inch x 10-inch mud pump and single-speed drawworks all mounted on a wagon, and a 12½-inch rotary table.

One hole drilled by this outfit was as follows:

Depth Feet	Drill Pipe Diameter Inches	Hole Diameter Inches	Casing Diameter Inches
0-100	2½	12½	10
840	2½	9⅞	7
1100	2½	5⅞	4½

The slip of the clutch prevented twist-offs. The engine consumed 45 gallons of gasoline per day. The drill pipe was handled in singles by an ingenious method of running it out on a four-wheeled carriage. This served to cut down the labor required as no derrick man was used.

The labor cost on this hole was approximately $1000.00, and the fuel, lubricants and bit sharpening cost $200.00. This latter did not include tool and equipment depreciation. This same outfit was moved 3½ miles over sand, rigged up, and used to drill 730 feet of 9⅞-inch hole for a material and labor cost of under $500.00.

In another Texas outfit, designed to drill to 3500 feet, the pumps and the drawworks were driven by separate 100-horsepower four-cylinder gasoline engines, but a special provision was made to connect the two engines in parallel when added power was required to operate the drawworks at deeper depths. The pumps, drawworks and rotary table, complete with engines, cost approximately $12,500.00. One hole drilled by this outfit was as follows:

Depth Feet	Drill Pipe Diameter Inches	Hole Diameter Inches	Casing Diameter Inches
0-200	5	14	10
2700	5	*9⅞	
3200	3	*9⅞	6⅝
3800	3	6⅞	4½

*(Carried 150 feet of 6⅛-inch rat-hole from 2400 to 3200 feet.)

Drilling time on this hole was 75 days. The engines consumed 140 gallons of gasoline and three gallons of lubricating oil per day. The only repairs to the engines in two years were spark plugs, fan belts and clutch linings. The superintendent favored more powerful engines on later outfits.

Most of the portables used in California have been made by one manufacturer. The typical portable outfit comprises a drawworks unit and a slush-pump unit. The rotary drawworks, usually a two-speed type, is mounted on a chassis which is supported by some type of caterpillar or truss wheels. The prime mover is rigidly fastened to the chassis in proper alignment for the drilling operations. Some portable drawworks units have the rotary table mounted on the same chassis. The usual outfit, however, has a separate rotary table used the same as with a regular non-portable outfit. Three types of prime movers have been used, although the multi-cylinder gas engine—usually of approximately 100 brake horsepower—is more common. The engine drives through an intergal reduction gear and power take-off chained to a reverse and friction clutch jackshaft, which in turn is chained to the drawworks line shaft. Some of these rotary drawworks units are mounted on wheels that are self-propelling.

FIGURE 2

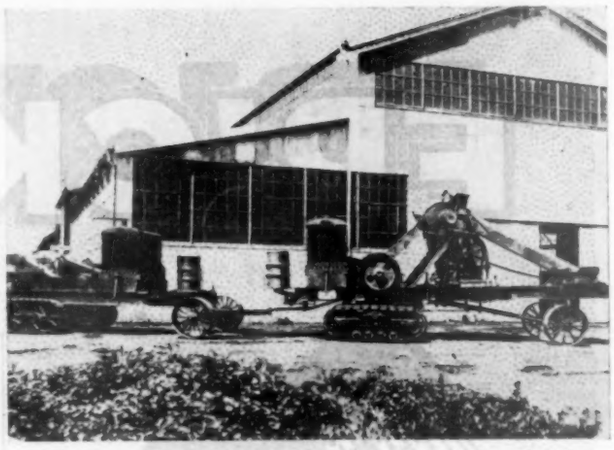

FIGURE 3

Electric motor-driven units have been successfully used. A 75-horsepower slip-ring induction motor, with the necessary controller and resistors, is the usual prime mover. The motor is direct-connected through a reduction gear chained to the line shaft. No jack shaft is necessary with this arrangement. The third type, shown in Figure 5, has a steam engine prime mover, usually a regular 10-inch by 10-inch twin drilling engine chained direct to the line shaft. The last two types of units must be towed to location.

The gas engine and electric-driven types effect cheaper power costs than the steam engine type, even though the steam engine permits faster hoisting speeds and has a greater overload capacity.

Portable slush pump units usually are powered in the same manner as the drawworks unit selected. The gas engine driven type, shown in Figure 3, usually consists of two 5¾-inch by 12-inch or larger pumps, driven by 100 brake horse-power multi-cylinder engine. The drive is through an integral reduction gear and power take-off chained to a jack shaft and so arranged that either pump can be chain-driven separately or both can be driven at the same time. The pumps and engine are carried on a heavy chassis and caterpillar or truss wheels which are not self-propelling. This unit may be towed to location by the drawworks unit, if the unit is self-propelling, or by other means. Electric motor driven pumping units are available for use. These are mounted similarly to the gas engine type When steam driven portables are used it is not cus-

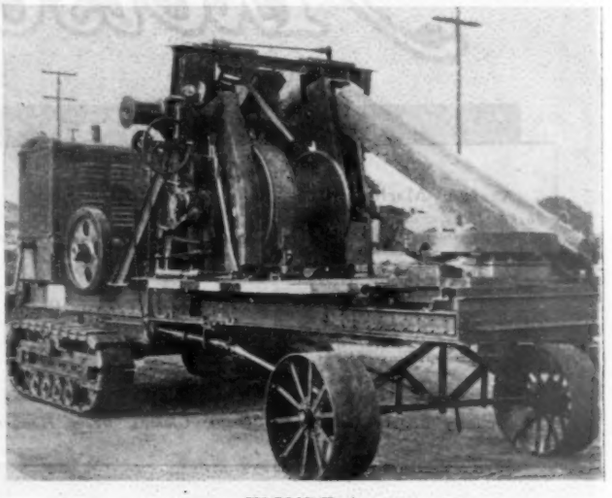

FIGURE 4

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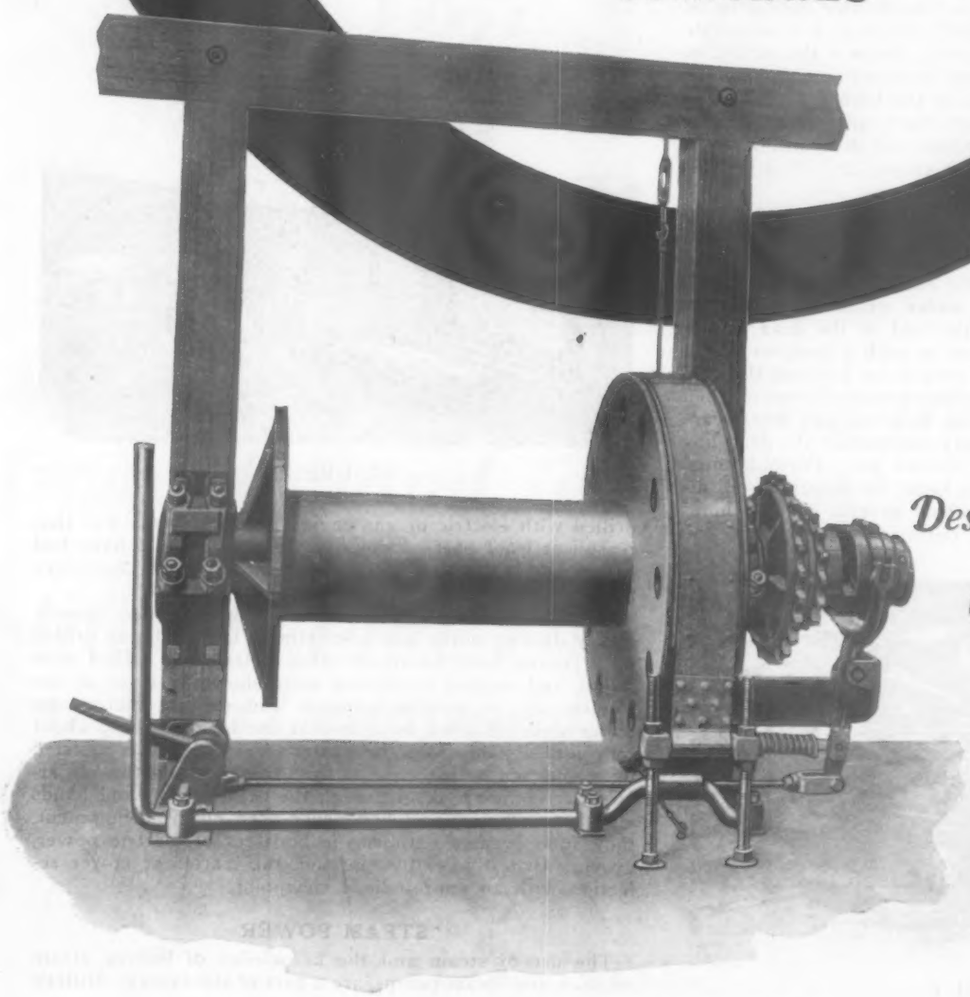

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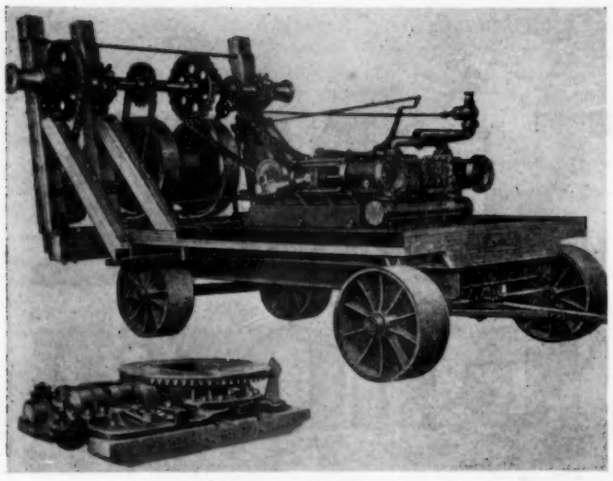

FIGURE 5

tomary to mount steam driven pumps on a chassis. Common practice is to mount them on heavy skids made of structural steel, timbers, or old casing. They can be then dragged from one location to another and still be kept in alignment so that the same manifold and piping can be connected again with a minimum of work. Rigging up the gas engine portable outfit illustrated in Figure 3 is shown in Figure 6.

A steel derrick is recommended for use with a portable outfit as it lends itself readily to dismantling and re-erection. On the shallower holes the 80- or 87-foot A. P. I. derrick, which permits the handling of drill pipe in doubles, is most commonly used. If there is considerable coring to be done or the well is to be over 2000 feet deep, it is advisable to use the standard 122-foot derrick, because the saving in time made by handling drill pipe in fourbles should more than pay for the increased cost of the higher derrick. Undoubtedly the steel derrick is particularly adapted to exploration drilling. The ease of erection and dismantling, even with comparatively inexperienced crews, and its high salvable value, are recognized.

With portable rotary units it is not customary to rig up the standard end to make a combination rig. The usual practice in California is to put in a calf wheel, on which to fasten the dead line and spool the excess cable, or to install a sheave in the derrick floor under which the dead line passes. In the latter method the end of the dead line is anchored outside the derrick and in such a position that a truck or tractor can be hooked onto it for hoisting the drill pipe in case of failure of the drilling engine or motor when the pipe is on bottom. In Texas, however, calf wheels are seldom instalied during the rotary operations; the dead line is fastened to a still near a derrick leg. Portable mud flumes made of steel have not been extensively used, although they show economies where several shallow holes are to b drilled with the same outfit.

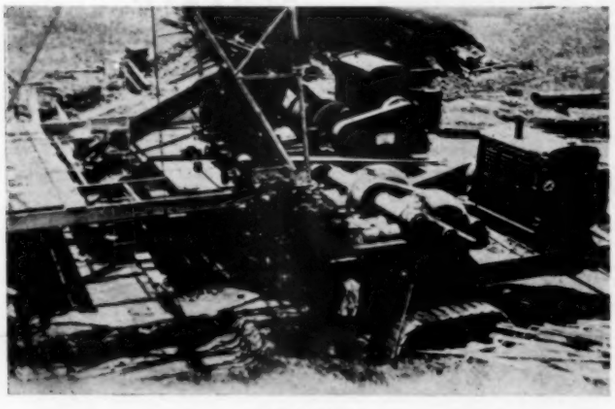

FIGURE 6

HEAVY OUTFITS

If the hole or holes are to be drilled 3000 feet or over in depth, the usual heavier or standard equipment is recommended for use in preference to portables. Many operators endeavor to use light old-style engines, drawworks, and pumps on shallow exploration drilling rather than to discard or junk them. It is questionable whether or not this practice is economical, as the increased drilling speeds made possible by larger engines, drawworks, and pumps may under favorable conditions justify their purchase. The maintenance costs of the lighter equipment warrants investigation, particularly if it is several years old. It is common practice to rig up the standard end on deep "wildcats" as an added insurance for getting out of difficulties such as stuck drill pipe and fishing during emergency shut-downs of the rotary drawworks.

POWER SELECTION

The proper selection of the power to be used is usually a debatable question. Steam has by far the most adherents, and its merits as a drilling motive power are conceded, but from the standpoint of power costs, steam is usually the most expensive alternative. Comparatively few men have

FIGURE 7

drilled with electric or gas engine prime movers. For that reason at least part of the selected crew should have had experience with the motive power and type of equipment that is to be used.

One California operator's experience with his first electric rotary drilling outfit was interesting. The well was drilled in a proven field where all other holes were drilled with steam, and marked economies were shown in favor of the electric rig. A weight indicator and drilling motor ammeter were installed on a post at the height of and about four feet distant from the driller's eyes. He was assisted in keeping an even torque on his drill pipe and thus twist-offs were minimized. Although the drillers were old hands with steam power and had never used electric equipment, they soon became enthusiastic boosters of electric power, proving that it pays to approach the matter of power selection with an unprejudiced viewpoint.

STEAM POWER

The use of steam and the knowledge of boilers, steam engines, and steam pumps, are a part of the average driller's

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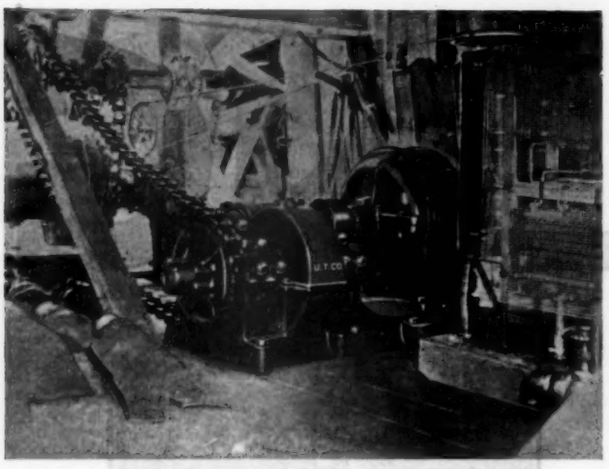

FIGURE 8

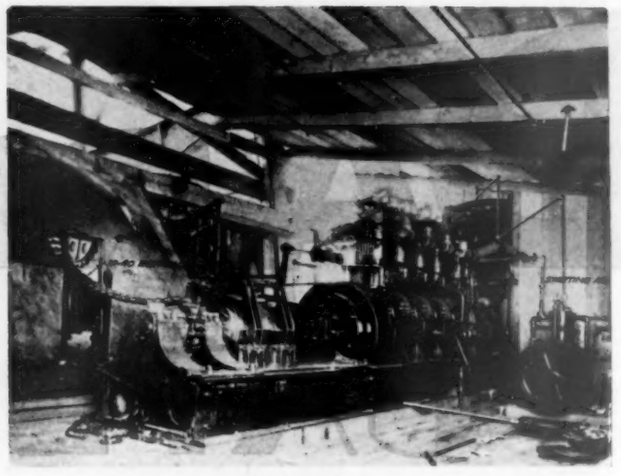

FIGURE 9

"stock in trade." Although the locomotive or firebox type of boiler is almost universally used, at least one large operator still uses the horizontal return tubular type. This latter type is more easily cleaned, cheaper to maintain, and capable of greater overload steaming capacity, and it is thus better adapted for use with hard water. The erection cost of the locomotive type is only about one-third that of the return tubular type, and its easy and rapid firing quality makes it a favorite with most operators.

There may be a choice of several water supplies near the well location, and that which is the easiest and cheapest to develop may prove far more costly in the end. A longer pipe line or pumping from deeper wells may ultimately be the most economical choice. Boiler shut-downs for cleaning, repair costs, and increased fuel consumption because of poor water are major items which show the importance of having the supply analyzed in avance for its encrusted salt content.

Where the water supply is meager, the use of gas engine or electric power may eliminate the necessity of part-time drilling sometimes required with steam power. Instances are known where steam units were installed in a district where cheap electric power was available and were operated only part time each day because of inadequate water supply. Such judgment in power selection is obviously unsound.

ELECTRIC POWER

Cheap fuel oil and gas, good roads, and cheap transportation have held back the use of electricity and gas engines in many areas. The operators cannot long overlook the very satisfactory results that are being obtained with electric power, and its increased use for drilling is anticipated. The low electric rates in California have brought drilling power costs down as low as ten cents a foot for some deep holes, a figure hard for steam to compete with.

Even in districts where central station electric power is available, the wildcat location may be too far from a transmission line to warrant a line extension for an individual test well, but cost estimates for required extensions should be made. Power company contracts are very fair for wildcat drilling, and oil operators generally receive fullest cooperation in their dealings with these companies.

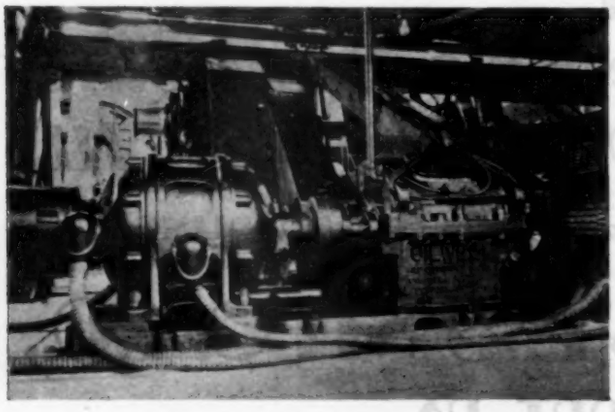

FIGURE 10

A comparison of the power costs for one year to drill deep exploration wells by electric and steam powered rigs, the latter fueled with either oil or gas, has been proven by one operator's experience to be approximately as follows:

The costs given include all comparative factors such as equipment erection and dismantling labor, water, fuel, lubricating oil, and maintenance of and depreciation of equipment.

(1) For the electric rig the cost will be: $7000 plus up and down cost on power line to site and cost of 500,000 kilowatt hours of electricity.

(2) For the fuel-oil fired steam rig the cost will be: $17,000 plus up and down cost on pipe line to site or fuel transportation facilities and cost of 18,000 barrels of fuel oil.

(3) For the gas-fired steam rig the cost will be: $16,500 plus cost of gas pipe line to site and cost of 60 million cubic feet of fuel gas.

The use of this data to compare power costs can best be illustrated by a hypothetical case. Suppose a deep drilling operation is to be carried on for one year at a location five miles distant from a source of gas and electricity and that fuel oil must be trucked to the location at a cost of $1.50 per barrel. It is assumed that fuel gas costs $0.25 per thousand cubic feet and that electricity costs $0.015 per kilowatt hour. The probable comparative costs for one year of using the various possible power sources will be as follows:

Item—	Electricity	Oil	Gas
Base	$ 7,000	*$17,000	*$16,500
Line, 15,000 volt, up & down	4,000		
4-inch, up & down			13,000
Electricity, 500,000 at $0.015	7,500		
Gas, 60,000 M at $0.25			15,000
Oil, 18,000 bbls. at $1.50		27,000	
	$18,500	$44,000	$44,500
*Deduction if no firemen required		6,000	6,000
Comparative Totals for One Year	$18,500	$38,000	$38,500

Obviously, with this particular set of conditions the electric powered rig should be chosen, as its use will effect an approximate saving of $20,000 for the year's operations over the oil- or gas-fired steam rig.

A complete electrically equipped wildcat well is shown in Figure 7. Two types of electric drives for rotary drilling are available: one type is the differential feed type which is discussed later. The most commonly used, how-

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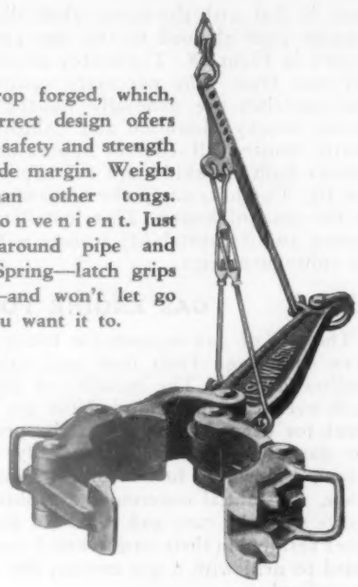

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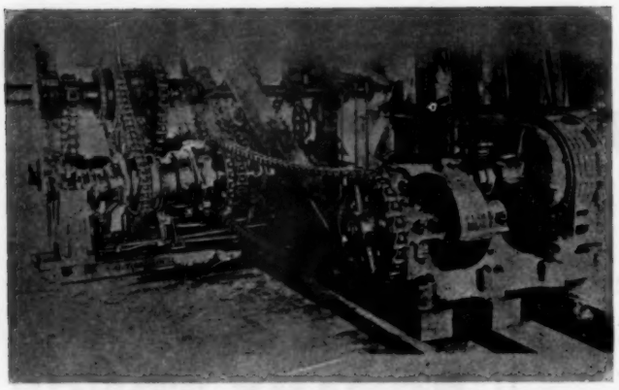


FIGURE 11

ever, is that with the motor shaft direct-connected to a reduction gear chained to the line shaft of the drawworks, shown in Figure 8. The motor usually is a 125-horsepower slip-ring type. The necessary controller, resistance grids, and switches are generally housed in the rotary engine house. Rocky Mountain and California operators have recently housed all control apparatus in separate portable houses built on skids and set approximately 75 feet from the rig. Conduits carry the necessary leads from the motor to the control house. This installation minimizes the fire hazard and its portability feature will reduce erection costs on subsequent rigs.

GAS ENGINE POWER

The use of gas engines for heavy rotary drives has not been extensive. Their best application is on portables for shallow drilling. The inability of the gas engines to meet peak overloads has retarded the use of this type of equipment for deep drilling up to the present time. Fuel costs for gas engine power are usually much lower than for steam, and where fuel must be transported any great distance, substantial economies are obtained. Unfamiliarity of crews with the care and repair of gas engines has in some cases resulted in their unwarranted condemnation. If it is decided to drill with a gas engine, the crew should be chosen accordingly.

DIESEL POWER

The use of Diesel engines for rotary drilling has been limited, though two rotary holes have been drilled quite successfully in California with complete Diesel power units. The equipment used included one four-cylinder 10-inch x 13-inch 150-horsepower engine to drive a three-speed drawworks and rotary machine, and one three-cylinder 10-inch x 13-inch 110-horsepower engine to drive two 6¾-inch x 14-inch power pumps. The three-cylinder engine was also arranged to drive the bandwheel and calfwheel.

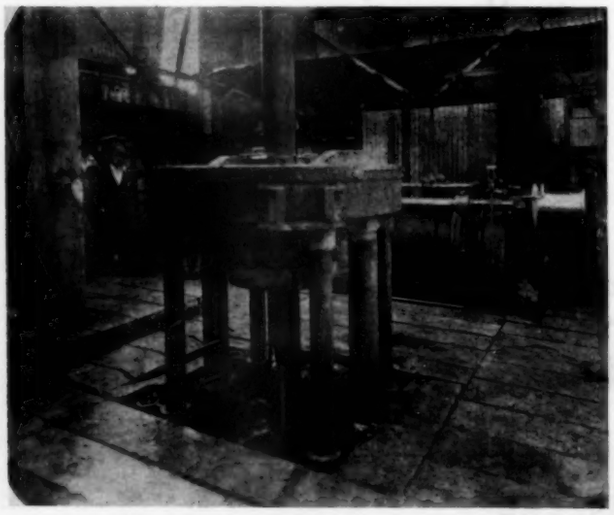


FIGURE 12-a

The well was cored from 1400 to 5200 feet, more than 400 cores being taken. The equipment handled the coring operation successfully and no trouble was experienced. 1400 feet of 11-inch, 4600 feet of 8⅝-inch and 5200 feet of 6⅝-inch casing were landed. Mechanical difficulties were experienced with the engines until a regular inspection of valves and a regular change of lubricating oil were carried out every 250 operating hours, after which time delays attributable to engine troubles were reduced to a reasonable minimum. The fuel used was filtered crude oil taken from a shallow adjacent well. The quantity required for both engines was less than three barrels per day. The two engines each were about as heavy as a 70-horsepower H.R.T. boiler. The total weight of the power units and pumps with all accessories was 80,000 pounds, as compared to 115,000 pounds for complete equivalent steam power equipment.

The total cost of Diesel engine and power pump equipment was approximately $10,000.00 more than that of equivalent steam power equipment, but the daily operating expense for fuel oil and water, considering the oil to be hauled to location at a landed cost of $1.75 per barrel, was $12.00 for Diesel power as compared to $105.00 for a steam-powered rig operating under similar conditions.

It is believed that Diesel engines have a future as prime movers for exploration drilling where fuel oil is expensive and electricity is not readily available, provided the manufacturers can develop sturdy units with a weight per horsepower more nearly comparable to multiple-cylinder gasoline engines. Engines of this type now are available for test, but no information is at hand to show that such tests have been made.

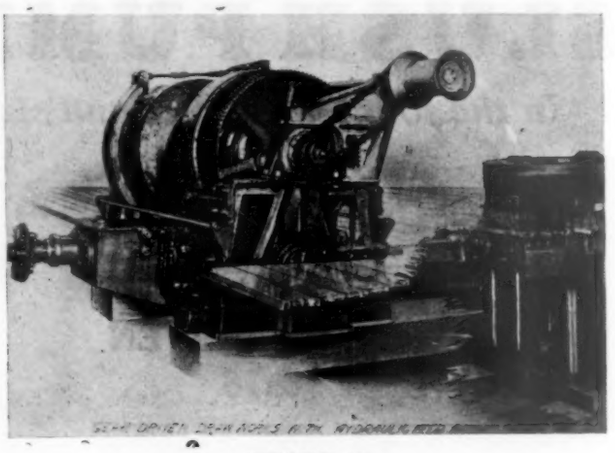


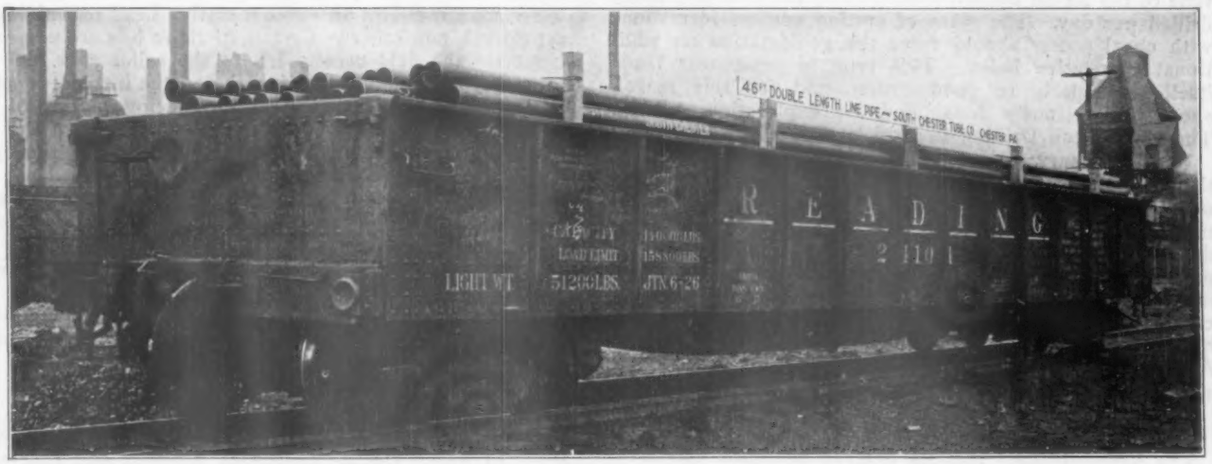
FIGURE 12

DRAWWORKS AND ROTARY MACHINES

The new heavy types of chain-driven drawworks and rotary machines are doing such excellent work on deep drilling that the possible advantages of use of lighter equipment even on shallow wells is questioned. Drilling time on the first four thousand feet of holes in the Signal Hill field has been decreased materially in the recent deep drilling campaign over those made during the 1922-1923 activity. This is accounted for primarily by the use of heavier and better designed equipment.

DIFFERENTIAL ROTARIES

Electric power is peculiarly adapted to automatically controlled drilling equipment. The Hild Differential Drive and the Halliburton Drilling Control for rotary drilling are noteworthy contributions to the industry. The former is illustrated in Figue 10. Its use is steadily increasing as its merits are being recognized. The automatic control of power applied, at a point which keeps the working stresses in the drilling equipment below the elastic limits of the materials in use, is theoretically correct. To keep a constant torque on the drilling bit should result in a



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straighter hole. Other conditions being equal, increased time of the bit on bottom should result in more hole being drilled per day. The rates of cutting various formations with equal power should serve the geologist as an additional correlative index. This type of equipment lends itself particularly to good coring, and for this reason should be seriously considered for exploration drilling. The Halliburton Drilling Control is shown in Figure 11.

Bore hole survey data is available which indicates that this type of equipment will drill a straighter hole than any other. Experiments with all types of equipment and methods, for the solution of how straighter holes can be drilled, should be undertaken by all large operating companies. Crooked holes in California fields have resulted in many complete failures to reach the pay sand. Numerous cases can be cited where adjoining wells less than one hundred feet apart are oil producers and water producers. Apparent dip in cores are valueless in determining dip of structure unless the inclination of the hole is known.

HYDRAULIC FEED ROTARIES

The hydraulic feed rotaries deserve favorable comment as a contribution to better and more scientific drilling equipment. The Doheny-Stone equipment is shown in Figure 12. Some of the first machines built were used to drill to depths unintended by the designers, and minor mechanical difficulties were encountered, but now improved and larger types of this machine are available which are successfully operating in two of California's most difficult and deepest fields. Any type of power—steam, electricity or gas engine—can be used on the Doheny-Stone outfits. Their particular differences to the common type of rotary is the gear-driven drawworks and the hydraulically controlled table. The latter allows absolute control of the weight on the bit, because any desired part or all of the drill pipe can be supported by the hydraulic table jacks. The feed control is extremely delicate, and is handled by a small globe valve. Cores taken with the equipment are extremely good and the per cent of recovery is excellent. The high first cost of this outfit has thus far kept it from wide use and only time will tell whether it is ultimately economical or not. It represents an advance in design and has passed beyond the experimental stage.

SLUSH PUMPS

The selection of the proper pumps for a particular well is important. Their prime mover should be selected to match the drilling prime mover. While the size of pumps has ever been increasing, there is a limit to what is necessary and economical. In general—the softer the formation which is to be drilled, the more rapid is the rate of drilling and the larger are the pumps that are necessary; also—the deeper the drilling is the larger are the pumps that are required. Much damage can be done to a hole in sand formation by the use of excessive volumes of circulating mud when the drilling rate is slow. Large cavities are hydrauliced out, which make twist-offs more common and fishing jobs more difficult. The reduced number of reversals of a large pump for a given volume over those of a smaller pump undoubtedly reduces wear and gives increased life to the larger pump. The larger pumps are an accepted improvement but their operating speeds should be carefully related to the drilling speed and size of hole.

DRILLING BITS

Many failures to get an exploration hole to the desired depth can be attributed to the selection and use of bits not adapted to the formations. No general rule can be laid down for this selection, but several types should be available for trial.

Several very serviceable new bit types have been developed within the last year or so. The old reliable trio—fishtail, disc and roller bits—have been supplemented by other ingenious types which are adapted to cut formations intermediate in hardness between those cut normally by the other types. These include the four-blade fishtail bit (with one pair of blades leading the other pair), the so-called W-K-W bit (with a single blade in the form of a letter S), the Zublin bit (with a cutting head resembling an artichoke), and others. Certain of these bits are encroaching upon the field usually left to the roller rock bits, because the increase in blade length and the increase in blade hardness account facing with hard-facing metals of the Stellite and Stoodite types and hard-set metals of the Borium, Titan, and Dymonette types have enabled the operator to get corresponding increases in hole drilled per bit.

It is quite likely that bits of this type may be the means of successfully drilling certain hard and soft laminated Rocky Mountain formations which now underlie the last stamping ground of the cable tool enthusiasts. Good welding service is almost a necessity to any drilling operation. If the well is located where outside welding service cannot be obtained, an experienced welder and proper welding equipment should be kept with the outfit.

CORE BITS

There are a number of excellent core bits on the market, some of which can be purchased outright and others of which can only be rented. The bit head rental service is in general use in many fields, and competition is so keen that the operator is assured of excellent material and service on core bit heads. Lack of proper coring may result in missing the pay sand. In exploration drilling the entire expenditure is to learn the true cross-section of the structure, and no expense should be spared in the coring operations. Only those drilling outfits and core bits should be used which best lend themselves to the taking of good cores.

With core bits, as with regular drilling bits, several new types have recently been developed. Both of the major manufacturers of rock bits have developed a satisfactory roller core bit for use in the harder formations. With the orthodox types many minor changes in the head design have resulted in increased footage drilled per bit head and increased per cent of core recovery. Application of hard-facing and hard-set metals has been in part responsible. Some of these newer bits bid fair to compete with the black diamond faced bits because they are so rugged and better adapted to operate with the lashing of the drill pipe normal to hand feed.

A unique feature, and one especially economical for exploration drilling where complete welding facilities are not at hand, has been the development of detachable bit-cutter heads of such short length that they can be thrown away after their run for only a nominal expense. Inasmuch as bit heads must be re-built accurately to insure concentricity of drilled hole and core, which factor may be unintentionally neglected by an unskilled field welder, the use of the comparativey cheap detachable bit-cutter heads should help to increase per cent of clore recovery.

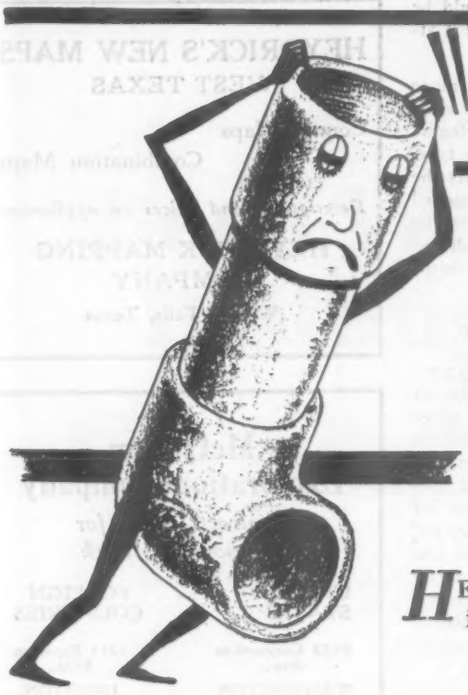
BLOCKS

If the hole to be drilled is over 3000 feet deep, it is false economy to use the older types of crown blocks and traveling blocks. The newer large-sheave roller-bearing types having sheaves from 36 inches to 48 inches in diameter, will pay for themselves by their increased operating speed and their decrease in casing line wear. Many operators, who have used the plan for evaluating wire rope service already described[1] have found that the use of large roller bearing blocks have cut down the costs per ton mile of service on deep drilling wells by 40 or 50 per cent., or to a figure of about 10 cents per ton-mile. It is of interest to mention that the "Seale Patent" 6x19 construction has proven to be best adapted for casing lines on deep rotary drilling.

PROTECTIVE EQUIPMENT

The selection and installation of proper and adequate equipment for controlling the well, should a producer be discovered, must be insisted on. Owing to the contingencies of an exploration well, this matter is paramount. At the first sign of gas, a drilling valve and blowout preventer should be put on, valves should be placed on the overflow

[1]A. P. I. Bulletin, Vol. IX, No. 7, Jan. 31, 1928, "A Practical Method to Evaluate Wire Rope Service."



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619 Petroleum Bldg., Houston, Texas

HIRSCH, BROWN AND SUSMAN
Attorneys at Law
Bankers Mortgage Building,
Houston, Texas
Specializing in Oil Law and Land Law

mud lines, and all preparations should be made for controlling the well should it attempt to blow in.

The several blowout preventers in more common use are the Baash-Ross or Hosmer, the Cameron, the Union, the Regan, the Emsco, and the Warren. A new type, the Reinie rotating preventer, permits the drill pipe to be rotated while it is packed off. This feature also characterizes the preventer furnished with the Dohenystone drill, which is equipped to use flush-joint drill pipe.

ACCESSORY EQUIPMENT

Miscellaneous equipment necessary should be selected with as much care as the major items. Quality and not price should regulate the choice. Expendible material, such as wire rope, chain, manila cordage, pump valves, pistons, and bits represent a very appreciable per cent. of the total cost of the well. The lack or failure of one small item may cause the shutting down of operations for many days. If the well is a long way from a source of supply it is good insurance to provide ample extra and accessory equipment on the job.

GENERAL

The adopted standards of the A. P. I. have simplified the work of selecting proper equipment. Insistence on the adoption of these standards will lessen confusion and should result in more economical drilling.

The responsibility of specifying the equipment should not fall on the purchasing agent but should rest with the man or men responsible for the drilling operations. The equipment buyer should not be handicapped by being forced to buy from one source of supply. It is most essential not to skimp in size, quality or amount of equipment. It is also essential not to set the limit of depth of hole to be drilled too low. The geologist usually wants a thousand or two more feet of hole if it is dry at the estimated horizon.

Harold C. Crawford of the Parkersburg Rig and Reel Company was a visitor in Tulsa recently. He is on an extensive tour of the Mid-Continent and other oil districts of western United States.

WANTED — A high-class executive familiar with oil field equipment in Mid-Continent field. Must be mechanical engineer. Only high-class salesman need apply. Address Box 562, care Oil Weekly, Tulsa, Oklahoma.

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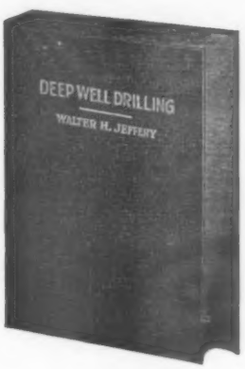
Second Revised Edition . . . .

Deep Well Drilling



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A comprehensive handbook covering in detail modern practices of well drilling by the standard or cable tool and the hydraulic rotary system.

During the few years that have elapsed since the publication of the first edition of "Deep Well Drilling" there have been so many improvements in well drilling methods and equipment that it was found necessary to practically rewrite the book for this second edition. This book furnishes complete information on drilling and the use of tools and equipment necessary to complete wells efficiently.

This book is a reference work for the engineer and the student and a handbook for the practical driller. Written by a man who has familiarized himself with his subject through a lifetime association with it. 662 pages, illustrated, flexible binding. Price reduced to $4.00, Postpaid.

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The flutes are fabricated so as to shut off water.

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Size Pipe, Inches	Length, Inches	Weight, Pounds
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2½	10	15
3	10	15
4	10	20
4½	10	20
4¾	10	20
4⅞	10	20
5-3/16	10	20
6	11	30
6¼	11	30
6⅝	11	30
8¼	12	40
10	12	60
12½	14	105
14	15	115
15½	15	150
16	15	150
18	16	170
20	16	195

Intermediate sizes, also sizes larger or smaller than listed can be furnished.

Note:—Smallest inside measurement is the same as inside diameter of pipe or casing on which nipples are to be used. In ordering, give size, weight, pitch of thread and make of casing on which nipple is to be used and also size and weight of casing through which nipple is to pass.

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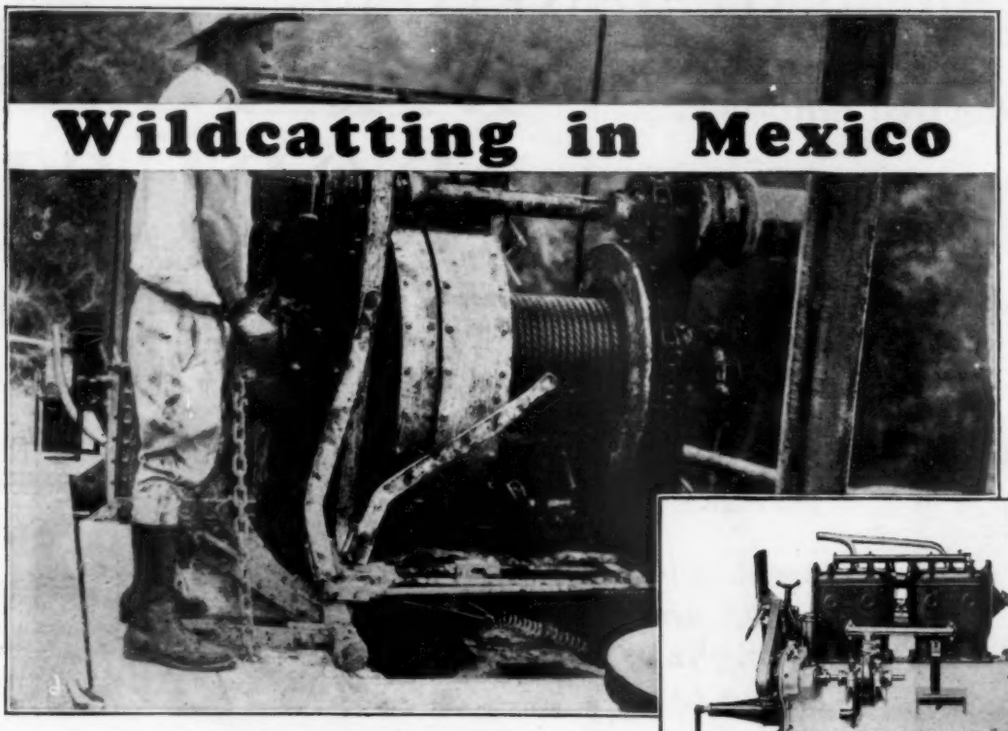
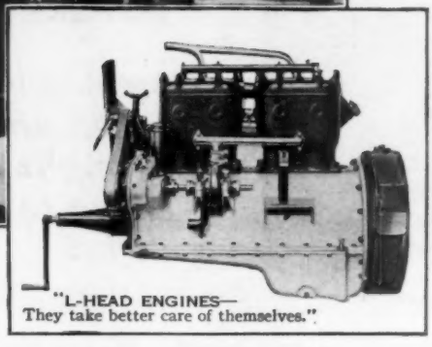
Wildcatting in Mexico



This machine was designed for drilling 2500-ft. holes and it has more than come up to expectations.



"L-HEAD ENGINES—
They take better care of themselves."

WEIGHING less than six tons this Sheldon D Machine, powered by a Waukesha 60 hp. engine, drilled 4160 feet—set 12½-inch diameter surface pipe—2700 feet of 6⅝-inch diameter casing and drilled the last 750 feet in limestone with rock bits all within 40 days' time. And this record was made at a tremendous saving in the cost of fuel and transportation.

Waukesha oil field engines are built in sizes up to 300 hp. to meet each oil field production requirement with the size most economical. The engines are readily portable and do not require elaborate foundation or enclosing buildings for mounting or protection.

904

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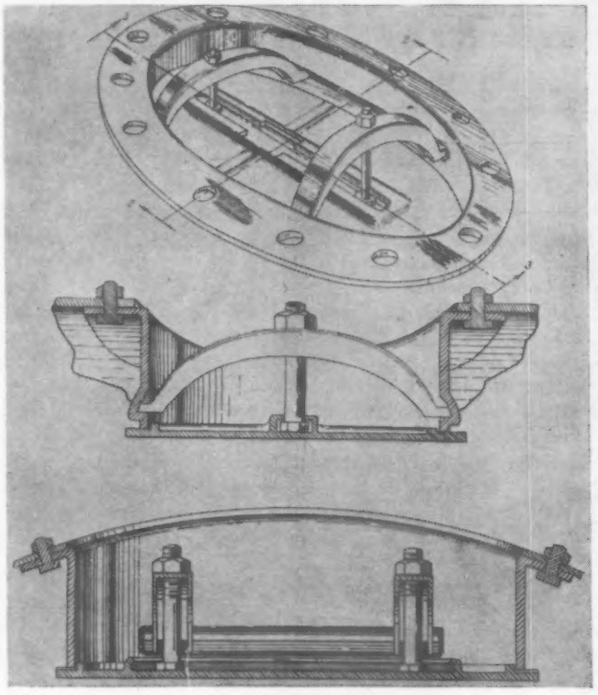


M. & V. Tank Cleanout Plate

New Type Tank Cleanout Plate

M. & V. TANK COMPANY

The M. & V. Tank Company of Wichita Falls, Texas, has patented a new type of cleanout plate, adapted for use in welded, bolted, riveted or wood tanks.

The collar is welded, bolted or riveted to inside wall of tank, immediately above the bottom. No part of plate projects beyond outside wall of tank.

It has only two bolts securing plate through use of two crabs similar to boiler hand-hole plate.

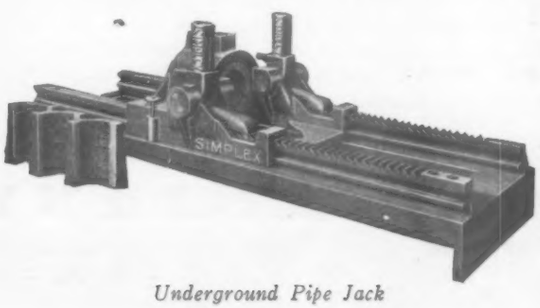
One of the advantages of this cleanout plate is that it may be removed in one minute and packed and replaced in five minutes.

Further information may be obtained by communicating with the company direct.

Underground Pipe Jack

TEMPLETON, KENLY & COMPANY

Templeton, Kenly & Company, Ltd., 1020 South Central Avenue, Chicago, have on the market the new Simplex Jacks for pushing pipe underground mechanically, thereby placing water, oil or gas lines under ground, accessibility of which is difficult. Use of the pipe is exemplified by such points as paved street, lawns, building obstructions, or under hard surface formations.

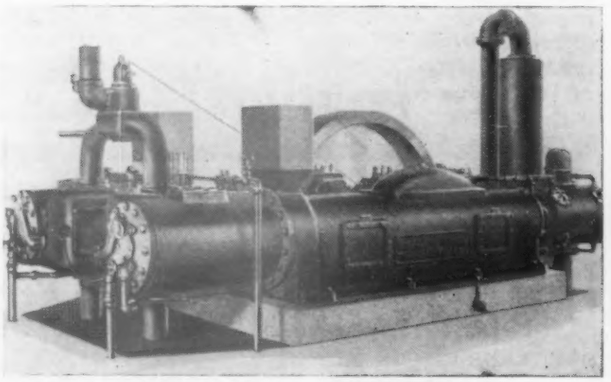


Underground Pipe Jack

These jacks are built in two sizes. Number 332 jack handles pipe of three-quarters of an inch to two inches in size, and Number 334 jack handles from two to four-inch pipe. The feature of this, mainly, is that each size of pipe requires a set of jaws to conform to this particular size, and crushing or distorting of the pipe is thus avoided.

The pipe is gripped by jaws in the center of the jack illustrated here, and one or two men operating each of the two levers cause the pipe to be pushed through the ground powerfully and accurately. The average time required to push a three-inch pipe through 25 feet of solid soil is between five and six minutes, using two men on each of the two levers.

Templeton, Kenly & Company, Ltd., has bulletins and moving picture reels illustrating the Simplex Pipe Pushing Jacks in action, and these may be obtained from the Chicago office or through any Graybar Electric Company, Inc., branch office. For foreign service, descriptive bulletins in several languages may be obtained from the International Standard Electric Corporation, 67 Broad Street, New York City, the Baldwin Locomotive Works at Philadelphia, Equipment and Engineering Company, Ltd., London, England, or from the Northern Electric Company, Ltd., of Canada.



Ingersoll-Rand Type XG Gas-Engine-Driven Compressor

New Two-Cylinder Gas Engine

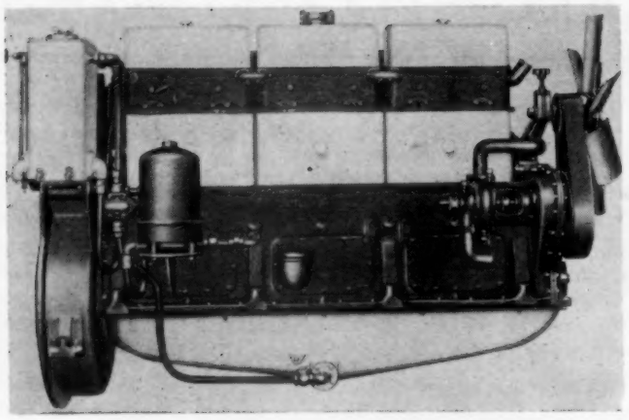
INGERSOLL-RAND COMPANY

Ingersoll-Rand Company, 11 Broadway, New York City, has recently announced a new direct-connected, gas engine-driven compressor, which is being introduced after several years of development under actual operating conditions.

It is the Type XG, a two-cylinder, four-cycle gas engine connected to Ingersoll-Rand compressing cylinders with I-R plate-type valves.

Features of the XG, which is illustrated here, are its rugged construction, accessibility of frames and running gear, and economy of floor space and foundation requirements. The compression end can be furnished to accommodate any of the usual conditions of pressure range.

Bulletin 3149, available upon request to the company, describes fully this new Type XG compressor, which is adapted to continuous service in the oil and gas industries, or to general industrial use.



Buda Diesel Engine

Buda Diesel Engine

BUDA COMPANY

The Buda Company of Harvey, Illinois, has started distribution of its new six-cylinder, 180-horsepower, Full Diesel engine, which carries standard equipment of fuel filters, lubricating oil filters, air filter, set of tools and starting equipment. It is closely related to designs of the M. A. N. Company of Germany, from whom the Buda Company is operating under license and patents.

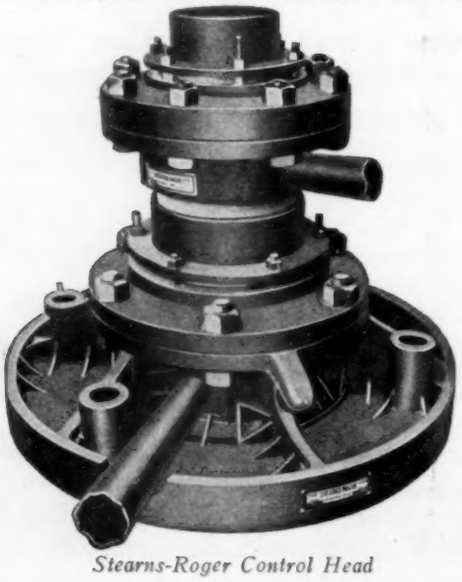
The new Buda Diesel engine is 6½ x 8¾, weighs approximately 5400 pounds with all equipment except the clutch. The overall length is 89 inches and the height is 58 inches. The engine is designed in accordance with the airless fuel injection principle, (spray atomization.) Compressed air is not used either for starting or running the engine. It is started by means of a small air cooled, two cylinder engine mounted on a bracket which is cast on the flywheel housing. Electric starters can be furnished for starting instead of the two cylinder gasoline engine if so desired.

These engines, with their normal operating speed of 1000 revolutions per minute, coupled with their compact proportions, can handle electric generating units, locomotives, rail cars, dredges, compressors, shovels and many other forms of industrial applications.

Pipe Suspension Control Head

STEARNS-ROGER MANUFACTURING COMPANY

Stearns-Roger Manufacturing Company of Denver, Colorado, are manufacturing and marketing a pipe suspension control head that is meeting with extreme favor among oil operators.



Stearns-Roger Control Head

Lew D. Hilton, veteran oil field superintendent, who for the past four years has been serving the Regan Forge & Engineering Company in the Mid-Continent, Colorado and Wyoming, in the capacity of sales engineer, has been retained by Stearns-Roger Manufacturing Company in the same capacity.

Stearns-Roger control heads are manufactured in the company's shops in Denver, and distributed in the Mid-Continent through the Longhart Supply Company, with Mr. Hilton in the field constantly supervising the field service.

The construction of these control heads is such that 99 per cent. of the volume is taken care of by means of the supporting device, which leaves but 1 per cent of volume exposed to the packing means.

This feature recommends itself instantly to the operator who recognizes he is getting 50 per cent. greater insurance against failure than with other popular devices that depend solely on packing means to hold both pressure and volume.

Since entering the oil field some years ago, Stearns-Roger Manufacturing Company has become a large manufacturer of oil field equipment and specialties. One of the latest developments of this company being the control head described above.

For further information and data write Stearns-Roger Manufacturing Company, at Denver, Colorado.

Eugene Kibele, 57, president of the Kibele Manufacturing Company, San Antonio, Texas, and prominently connected with the manufacturing industry for many years, died suddenly of heart trouble December 28.

Mr. Kibele was connected with the Bullock Electrical Company and the Allis-Chalmers Company of Milwaukee from 1900 to 1910. At one time he was general superintendent of the Henry R. Worthington Pump Works at Harrison, New Jersey, and later was one of the pioneer workers in rotary drilling as general manager of the J. F. Lucey Company, Chattanooga, Tennessee. He also served as vice president and general manager of Clark Brothers of Olean, New York, from 1916 to 1920. He will be remembered as having introduced the Bull Dog Pump.

In his own company he has won considerable success with his piston and swab, his own inventions, in the Southwestern fields during the past two years, and served an extensive South American market.

He was born in Bluffton, Ohio, in 1871. Two brothers, O. B. and J. A. Kibele, both of California, are now prominent in the mercantile field. His business at San Antonio is being continued under the supervision of his daughters, Mrs. M. K. Barr of Los Angeles, and Mrs. Eugenia Schroeder of Denton, Texas.

John A. Manley, who was for the past three years manager of sales development for Fairbanks, Morse & Company, Chicago, has been elected vice-president in charge of sales of that company. He was formerly manager of accounts for Henri, Hurst & McDonald, advertising agency, and in that capacity made a detailed study of the problems of industrial business development, particularly fitting him for handling the sales of Fairbanks, Morse & Company, with their varied line of products, including Diesel engines, pumps, motors, scales, railway equipments, small light plants and automatic water plants and similar items.

The National Flue Cleaner Company, Inc., of Groveville, New Jersey, has appointed the following western agents to handle the National Soot Blower for fire tube boilers: McGee Sales Agency, 75 Freemont Street, San Francisco; Flickinger, Meyers & Rudolph, 129 West 2nd Street, Los Angeles, and the Manufacturers Sales Service, Salt Lake City. W. A. Ramsey, Ltd., of Honolulu, was appointed representative for Hawaii.

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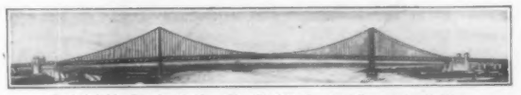
Mid-Continent Oil Fields: Atlas Supply Co., Tulsa and Muskogee, Okla., Fort Worth, Texas; Farley Machine Works Co., Arkansas City, Kas.; Mid-Continent Supply Co., Houston, Texas.

California Oil Fields: American Cable Co., Inc., San Francisco, Calif., and W. B. Cornish, 3924 Baker Ave., Bell, Calif.

ACCO — An Associate Company of American Chain Company, Inc. In Business for Your Safety

Detroit International Bridge



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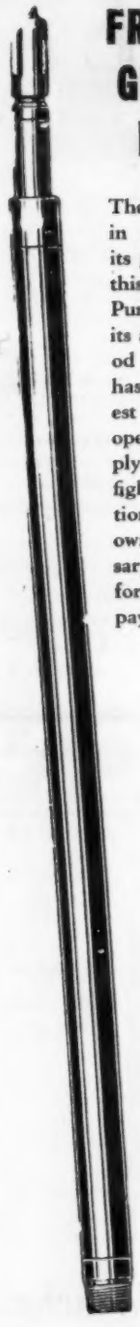

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SQUEAKS FROM THE BULL WHEEL

Jones was a druggist, and when his wife ran away with another man he inserted the following advertisement in the local paper:

"This is to notify the party who so kindly relieved me of my wife, that I can supply him with liniments, bandages, arnica, healing salves, absorbent cotton, iodines, sleeping powders and crutches at bottom prices."

Caddy (to new English member of the golf club): "Do you like an 'igh tee, sir?"

"What's it to you if I like an 'igh tea or a dinner? You put the ball on the 'ump, and I'll 'it it."

"Madam, your husband has been run over by a truck!"

"Good Heavens! On the afternoon of my bridge party!"

"I understand you went fishing."

"We started," said Mr. Chuggins, "but by the time we had repaired the radio set, and made three detours after mending a couple of blow-out tires, it was time to turn around and come home."

"Low bridge," shouted the bus conductor. "Everybody keep his seat and face to the front."

A gay little flapper up forward turned around, smiled sweetly, and said, "You know that can't be done."

"Mama, is papa going to heaven when he dies?"

"Why, son, who put such an absurd idea into your head?"

She was very rich and he was very poor. She liked him, but that was all, and he was well aware of the fact. One evening he grew somewhat tender and at last said: "You are very rich, aren't you, Helen?"

"Yes, Tom," replied the girl frankly, "I am worth about two million dollars."

"Will you marry me, Helen?"

"Oh, no, Tom, I couldn't."

"I knew you wouldn't."

"Then why did you ask me?"

"Oh, I just wanted to see how a man feels when he loses two million."

A grammar school teacher writes to the Outlook: "It is really surprising how many new and startling things I learn from my pupils. Last week, for instance, I found from the examination papers of a class of 25 that:

"The plural of spouse is spice.

"The subjects have a right to partition the King.

"A mosquito is a child of black and white parents.

"The population of New England is too dry for farming.

"A vacuum is a large empty space where the Pope lives."

I hear you had a housewarming over at your house the other day.

Yes, the coal company's truck broke down in our alley.

"I say, waiter, there's a fly in my soup!"

"Surely not, sir; maybe it's one of those vitamin bees you read so much about."

At night when sudden trembles shake
And agitate the casement,
The cause may be a distant quake,
Or raisins in the basement.

It was not the feet that caused Sandy to look so sorrowful, as he staggered from the palmist's tent. "Mon, Sandy, whit's wrang wi' ye?" exclaimed a friend. "Ye're lookin' awfu' glum."

Sandy pointed to the tent he had just left and answered: "That wumman in there told me my wife's second husband was tae be very handsome and clever."

"But," said his friend, "ye're no needin' tae worry aboot that. It'll be all the same when ye're dead and awa'."

"It's no that," replied Sandy. "Whit's makin' me sad is tae ken Jean wis mairrit afore an' never telt me!"

The teacher was trying to give her pupils an illustration of the word "perseverance."

"What is it," she asked, "that carries a man along rough roads and smooth roads, up hills and down hills, through jungles and swamps and raging torrents?"

There was silence, and then Tommy, whose father was a motor dealer, spoke up. "Please, miss," he said, "there ain't no such car."

"I guess we'll make port," said the sailor as he threw in another handful of raisins.

What is usually done with the holes of doughnuts?

They're used to stuff macaroni.

Prof.: Can you prove that the square of the hypotenuse is equal to the sum of the squares of the two sides of this triangle?

Stude: I don't have to prove it; I admit it.

An old negro preacher was explaining to his congregation the difference between faith and knowledge. "Now, my bredren," he said, "hit's like dis, dars Brudder Johnsing a sitting on de front seat wid Sister Johnsing and de five little Johnsings. She knows deys her chillen, dat's knowledge. He believes deys his chillen, dats faith.

"I suppose you were nervous when you first asked your husband for money?"

"No, I was just calm—and collected."

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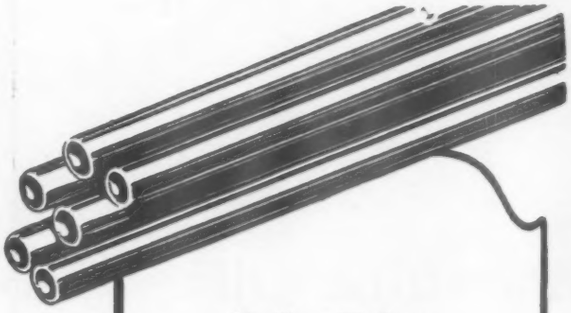

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PETROLEUM COKE
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PHILADELPHIA, LOUISVILLE

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Providence, R. I.
New York Harbor (Bayonne, N. J.)
Jacksonville, Fla.
Port Tampa, Fla.
Mobile (Magazine Point, Ala.)
Philadelphia (Giraud Point, Pa.)
Charleston, S. C.
Savannah, Ga.
New Orleans (Gretna, La.)
Port Arthur, Texas.
Galveston, Texas

At Little River, Okla., at Earlsboro, Okla. and other places

Continental Oil Company uses this type of Butler Steel Engine House

The engine house is only one of many uses made of Butler *Ready-Made* Steel Buildings in the oil field. They are also used as boiler houses, compressor houses, warehouses, belt houses, bunk houses, etc.

Besides the [illegible]tinental Oil Company, the Signal Oil Company and the Standard Oil Compar[illegible]diana and the Big Lake Oil Company and the Atlantic Oil Producing Company and many others use Butler *Ready-Made* Steel Buildings. They are used both North and South, in Wyoming and in New Mexico.

[illegible]l and roof sheets are made of 24 gage galvanized steel. The sheets have [illegible] that are deeper and wider, stiffer and sturdier than mill rolled corru[illegible].e corrugations are made in our own plant and are deeply drawn and [illegible]ne sheets are bolted together and to the steel frame with galvanized bolts.

An illustrated Building Catalog shows how oil men are using these steel buildings. Write for a copy. *Prices are quoted f.o.b. plant or erected.*

This building is on the Cozar No. 2, Little River, Okla. Others like this are at Kays Farm, Earlsboro, Oklahoma, and elsewhere.

These reliable dealers handle Butler *Ready-Made* Steel Buildings:

M. & V. Tank Co., at Wichita Falls, Olney, Nocona, Cross Plains, Albany, Cisco, Isom, and Brownwood, Texas.

Drane-Humphrey Co., at San Angelo, Big Lake, Pyote and McCamey, Texas, and Roswell, New Mexico.

Drane Tank Co., at Tulsa, Holdenville, Seminole, Hallett and Shawnee, Oklahoma; Eldorado and Madison, Kansas.

M. A. Trimmer at Blackwell, Oklahoma, and Oxford, Kansas.

Keyes-Butler Tank Co., at Casper and Cody, Wyoming.

Thomas Moran at Oil City, Shreveport, and Georgetown, Louisiana; Muskegon, Mich.

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Butler Products include: READY-MADE Steel Buildings, Cans, Funnels, Buckets, Measuring Pumps, Truck Tanks, Underground Tanks, Storage Tanks, Bolted Tanks, Etc. Pipe that can be used as conduit, double well casing or other ways.

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